



**DETERMINANTS OF SAVINGS AND INVESTMENT AMONG LOW-
INCOME HOUSEHOLDS IN SOUTH AFRICA**

by

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DECLARATION

I, Chantel De Vos, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.



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ABSTRACT

This study examined the determinants of savings and investment among low-income households in South Africa. Savings and investment play a significant role in improving living standard of people and also act as important factors for state survival in times of economic crises. The benefits of household savings and investment cannot be easily quantified, especially in achieving economic growth. Despite the numerous benefits, low income household savings and investments remain an issue that has characterised the lives of many low-income households in South African since post-apartheid.

The study is based on Non-Ricardian Households (NRH) which comprises medium and high-income households, which are involved in the financial market, participate in buying bonds or stocks, and are classified as saving households. Non-Ricardian households comprise low-income households which largely depend on government welfare benefits for sustenance and are classified as the low savings and hence low-income households.

The research used *National Income Dynamics Study (NIDS)* dataset wave one to five. Four different panel models were analysed in determining the socio-economic characteristics of NRH in South Africa. The panel estimators include Pooled OLS, fixed and random effects methods. The results show that households' income, household size, household geographical local and household grants among others are major determinant of households' savings and investment in South Africa. Government grants received by households have positive relationship with savings and negative relationship with investment. This is because the low-income households do not save to invest but save for delay consumption. The results have also showed the likelihood of government grants to household's crowd out household investment as they over depend on the government for both present and future expenditure.

The study recommends that government should create a more enabling environment for Non-Ricardian households to engage in productive activities and to also create more low skills jobs and encourage reduction of birth rate among low-income households.

Key words: Savings, Investment, Non-Ricardian Households, Government grant, South Africa.

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DEDICATION

In loving memory of my father, Mr. Hukie Pieters.

ACRONYMS

| | |
|--------|---|
| NIDS | National Income Dynamics Study |
| SALDRU | Southern African Labour and Development Research Unit |
| PSLSD | Project for Statistic on Living Standards Development |
| PPP | Purchasing Power Parity |
| CSG | Child Support Grant |
| GDP | Gross Domestic Product |
| GDS | Gross Domestic Saving |
| IDA | Individual Development Accounts |
| LFPR | Labour Force Participation Rates |
| MDGs | Millennium Development Goals |
| MPS | Marginal Propensity to Save |
| OLS | Ordinary Least Squares |
| SASSA | South African Social Security Agency |
| SCF | Survey of Consumer Finances |
| SDGs | Sustainable Development Goals |

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CHAPTER ONE

Introduction

1.1 Background to the Study

Savings and investment have been empirically proven to help in improving living standard and act as shock absorbers during economic shocks, as it is pivotal in helping nations survive in times of economic crises (Rhee, & Boivie, 2015; Ksoll, Lilleør, Lønborg, & Rasmussen, 2016; Loibl, 2017). Specifically, the benefits of household savings cannot be overemphasised because it is an amount set aside against unforeseen circumstances; it serves the purpose of accumulating assets and makes funds available for household investment decisions. Savings can help in building homes and houses; it improves debt settlement, and the provision of social services. Household savings sustenance increases the chances of posterity investment, both at the micro and macro-levels in the economy (Suppakitjarak, & Krishnamra, 2015; Rehman et al., 2011; D'Orazio, & Giulioni, 2017; Choedup, 2013; Baranov, & Kohler, 2018). Furthermore, household savings have been described as a pathway to economic development starting from household level to the whole country. This assertion has been empirically adjudged from both developing and developed countries, because of its important role in the circular flow of income in any economy in the world (Iyoha, Oyefusi, & Oriakhi, 2003; Chamon, Liu, & Prasad 2013; Dupas, & Robinson, 2013; Blanchard, & Giavazzi, 2016; Lin, Wan, & Morgan, 2018; Mayer, 2018).

Despite the numerous benefits, low income household savings and investment remain an issue that have characterised the lives of many low-income households in the South African economy since post-apartheid (Simlet, Keeton, & Botha, 2011; South African Reserve Bank Report, 2012; Chipote, & Tsegaye, 2014). As noted by the Simlet et al. (2011), Chipote and Tsegaye (2014), and South African Reserve Bank (2012), household savings (net) was a percentage of GDP in South Africa with average of 1.63% in the 1990s, before declining to as low as 0.35% between 2000 and 2005. This estimate further dwindled between 2006 and 2008 to a mere -0.63% and a negligible increase in net values of an average of -0.20% between 2009 and 2011. Recently, between 2015 and 2016, it showed a further negative behaviour of net savings which stood at -2.27% and -0.725% respectively. In 2017, the South African Reserve Bank (2017) revealed a positive figure for net savings which rose to 0.2% and remains positive up to the first quarter of 2018. Researchers such as Chipote and Tsegaye (2014), Simlet et al. (2011), Zwane, Greyling, and Maleka (2016) submitted that low savings

was an impediment to sustainable economic growth and ultimately economic development and exact pressure on the country's current account balance.

The focus of this study is to examine the determinants of savings and investment among low-income households in South Africa. Economic theory posits that household savings is the proportionate part of household income that is not consumed. Household income is the summation of household earnings from all sources in a particular period of time (Chamon, Liu, & Prasad, 2013). There is consensus on the equality of savings and investment and many empirical works identify positive nexus between the two economic concepts. National savings consist of both private and public components and are often regarded as instrumental in attaining sustainable economic growth at a country level (Kudaisi, 2013; Amusa, 2013; Obayelu, 2012). The reasoning is logical: higher savings in a country starting from the household level generate improved resources for investments, and more investments, in turn, lead to increase in industrial growth, reduction in unemployment, stable prices and ultimately gives way for sustainable development (Rehman et al., 2011; Suppakitjarak, & Krishnamra, 2015; Ogbokor, & Samahiya, 2014).

In the South African context, understanding determinants of savings and investment is often complicated by retrospective apartheid. The apartheid system limited households' ability to save, forcing them into vicious cycle of poverty; the majority of the households earned low and saved little. The apartheid policies affected South Africa's populace negatively, especially blacks, not only stripping them of their productive assets, typically livestock and land, the cornerstone of their livelihoods and savings ability, but also taking away their market power. Also, it made low savings and low investment to be both cause and effect of poverty and their poverty situation became self-perpetuating (May, & Norton, 1997). Zwane, Greyling and Maleka (2016) identified three germane socio-economic legacies of apartheid. The research focuses on low-income group, and the group was regarded as poverty-stricken populace with negative savings. Besides the apartheid factor, unemployment and large economic gap between the rich and the poor can be some of the factors that influence negative savings. This complicates the understanding of determinants of savings and investment position of low-income households, which are majorly characterized by their race.

1.1.1 Defining low-income household

Statistics South Africa defines a low-income household as a household with an annual income between R1 and R19 200. A survey conducted by the Income and Expenditure Survey of

2010-2011, the average annual household's income for poor households was at R25 348. This in turn were seen as substantially high compared to the household income of R19 200 who were in the low-income category and classified as a poor household (Statssa, 2011:19).

1.2 Statement of Research Problem

Li and Spencer (2016) categorised households into two types: Ricardian and Non-Ricardian households. The former (Ricardian) households comprise both medium and high-income households, which are involved in the financial market, participate in the buying of bonds or stocks, and are classified as the saving households. The latter (non-Ricardian) households comprise low-income households and largely depend on government welfare benefits to sustain themselves, which results in zero or negative savings. The Marginal Propensity to Save (MPS) of low-income households is very low, given that greater proportion of their incomes has to be spent on food items and other essentials. It has been observed that financial illiteracy is predominant among low-income households in South Africa due to the level of educational attainment and exposure. This makes the populace to have biased preference for leisure than work, coupled with the weak link in domestic savings and the preponderance of households having a very high consumption rate, compared to their disposable income. This, in turn, results in increasing indebtedness of the households, and pushes them out of regular employment by removing the incentives to work under a working financial stream. Thus allowing the populace to form part of the growing number of dependent people in the country who have either low or no income (World Bank Group, 2011:19).

Furthermore, 17 million people are dependent on different government support grants ranging from child support grants to old age grants. This figure is more than 30% of the South African population. The cost of the grant is expected to increase to R175 billion by 2019. The inclusion of the people to qualify for government support grants depends on the mean test which involves the income threshold of the poor populace. The growing cost of government grant does not only hinge on the increased level of inflation but largely depends on the number of people entering the poor income threshold. What keeps the number of dependents growing annually has not been empirically determined – besides the levels of unemployment, poverty and inequality (above 0.59 reported Gini coefficients) (NIDS, 2015). This research will focus on the major determinants of savings of the households with government grants and the panel analysis of wave 1 to 5 of National

Income Dynamic Studies will be used to answer the research questions raised from research questions identified.

1.4 Research Question and Sub-questions

This study raises the following question that will help while learning the determinants of savings and investment among low-income households in South Africa. What are the major factors that drive poverty? What keeps them in the vicious cycle of poverty? What threshold of savings is required to move them above poverty line? As much as these questions beg for answers, the role of empirical research in this regard is undoubted.

1.4.1 Research Sub-questions

- What are the trends of savings and investment among low-income households in South Africa?
- What are the major determinants of savings among low-income households in South Africa?
- What are the major determinants of investment among low-income households in South Africa?
- What are the reasons why low-income households do not invest from their savings?

Objectives

The purpose of this study is to investigate the determinants of savings and investment among low-income households in South Africa. Studying the determinants is important because, research has revealed that household savings play a major role in promoting sustainable growth of both developed and developing nations, due to its direct role in the circular flow of income in the economies. The benefits of savings include preparation against unforeseen circumstances, the accumulation of assets, ensuring the availability of funds for household investment and making provision for retirement (Kasongo et al., 2016:1).

The research objectives of this thesis are as follows:

- To determine the trends of savings and investment among low-income households in the South Africa.
- To ascertain the major determinants of savings among low-income households in South Africa.
- To establish the major determinants of investment among low-income households in South Africa.

- To establish the reasons why low-income households do not invest from their savings.

1.6 Ethical Consideration

All ethical issues around this thesis was addressed by first obtaining a permission letter needed from the Cape Peninsula University of Technology Faculty of Business and Management Sciences Ethics Committee and also a consent letter from Data First for the use of the NIDS (National Income Dynamics Study) dataset needed in this study (the NIDS data is available for the public use at www.datafirst.uct.ac.za). Therefore, approval to use the data and get the overall biannual data from Data First, School of Economics, University of Cape Town, was obtained for the research work. All the materials used which form the basis of the idea of this thesis will be acknowledged since the study is based on existing knowledge of previous work of scholars in the field. However, if there are any omissions as per recognition of any work previous work used in this thesis, the fault is all mine and unintended. Also the outcome of the analysis presented in this study is basically my personal interpretation and not intended to put down any group of people as per income, race or gender.

1.7 Significance of the Study

The aim of the research is to make a significant contribution towards the unappealing situation of household savings and investments. The aim of the research is to develop a set of recommendations that will support the creation of an avenue to improve savings and investment culture within the target population, namely low-income households within the South Africa economic space.

1.8 Delineation of the Research

The researcher intends to limit the study only to low-income households in South Africa and shall cover the five waves of questionnaire NIDS data from 2008 to 2017. The 2017 data was released in July, 2018 and is the most recent data set from SALDRU. The data will be sourced from Southern African Labour and Development Research Unit (SALDRU)/DataFirst Unit, School of Economics, from the University of Cape Town.

1.9 Limitations of the Research

The limitations of this study pertain to the number of low-income household data availability in the cross-sectional NIDS data for the period 2008 to 2017 which shall be sourced secondary data by the researcher and used for the analysis. Also, there might be a need to

employ a number of research assistants to help in data cleaning and sorting of household data in order to finish the research within the time frame proposed. The NIDS data comes with a lot of noise due to the coverage of several socio-economic events and the data needs analyst cleaning before it can be efficient for the purpose of the research and to answer the research questions effectively for better inferences. In addition, the use of only quantitative method to answer research questions rather than mixed method is a limitation that should be given a full consideration for future research.

1.10 Research Assumptions

The research assumptions reveal to the reader how the study was conducted and help him or her to evaluate the research (Watkins, 2010).

The following assumptions apply to this research study:

- Low-income households have negative savings – that is, their expenditures are usually greater than their incomes, and therefore, have low capacity for investment that will yield future profit.
- Low-income households cannot afford to be involved in the financial market – that is, buying bonds, shares, stocks, etc.
- Low-income households are relatively close to or below poverty line and they are predominantly among the black/Coloured race in South Africa. Also, it is assumed that there is the existence of threshold of savings or investments that can pull them out of vicious cycle of poverty.
- Low income households largely depend on government grant and the government criterion is objective.

1.11 Contribution of the Research

The aim of the research is to make a significant contribution towards addressing the unfortunate situation of household savings and investment in low-income households in a region of South Africa. The study will fill the gap in research on the lamentable low level of savings of South Africans. These same households tend to have a high level of debt and are being faced with the increased pressure of high interest rates and debt repayment. As household debt continues to increase, disposable household income grows at a rate below that of inflation. These factors have forced many South African households to turn to their

retirement savings to cover cost-of-living expenses and meet their investment needs (Grobler, 2014:1).

1.12 Chapter Layout

In chapter 1, the study focuses to examine the determinants of savings and investment among low-income households in South Africa. The background will provide the scope of the research process pertaining to savings and investment as well as explaining the research design and methodology. As well as why savings and investment play a significant role in improving the living standards of people to survive when economic crises do arise.

Chapter 2, foremost the study will focus on namely two households Ricardian and Non-Ricardian households. Ricardian Households (NRH) which comprises of medium and high-income households as well as Non-Ricardian households which comprise of low-income households which largely depend on government welfare benefits for sustenance and are also classified as the low savings and hence low-income households. The researcher shall make use of data from the National Income Dynamics Study called NIDS

Chapter 3, the literature will be reviewed insights that are gained from the literature and elaborated upon. With close attention on determinants of savings and investment among low-income households in developing countries with the focus on South Africa for its uniqueness of its economic characteristics.

Chapter 4, in this chapter the constructing of the framework to analyse the data from the previous chapter in order to answer the research question and its findings will be elaborated upon.

Chapter 5, in this chapter the research will be concluded as well as the final conclusions drawn upon.

1.13 Chapter Summary

The study focuses on savings and investment and how this can improve the standard of living when economic crises do arise. Foremost the benefit of household savings is to set aside an amount against unforeseen circumstances which will serve in accumulating future assets and make funds available when needed. Thus, by having household savings it

improves debt settlements, as this an integral part to increase the posterity of investments in the economy both at a micro and macro level to sustain economic growth.

1.2.1 Definition of Key Words

The key words are defined as follows:

Savings: Savings is the portion of income not spent on current expenditures. Because a person does not know what will happen in the future, money should be saved to pay for unexpected events or emergencies (available from <http://www.financeintheclassroom.org/> [accessed on 01/08/2018]).

Investment: Investing is the act of committing money or capital to an endeavour (a business, project, real estate, etc.), with the expectation of obtaining an additional income or profit (available from <http://www.investopedia.com/> [accessed on 01/08/2018]).

Low-income households: A low-income household is one whose income is low, relative to other households of the same size. A household is commonly classified as low-income, and can be eligible for certain types of government assistance, if its income is less than twice the poverty threshold (available from <http://kwhs.wharton.upenn.edu/> [accessed on 01/08/2018]).

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter two provides an introduction and background to the research study by describing and defining all the key concepts used in the research study; this is to help the reader to comprehend the contents of the material to better understand and read it, thus leaving out any confusion and ambiguity.

2.2 COMBATING POVERTY AND INEQUALITY IN SOUTH AFRICA

In 1994 the first South African democratic elections were held and it brought about the promise of equal opportunity as well as an overall improvement of living standards for the majority of its population. The newly elected government promised to combat the high levels of poverty as well as inequality inherited from the apartheid regime in the past. Twenty years after the democratization of South Africa, the levels of inequality still remain high. Therefore, by investigating which different sources continue to drive those high levels of inequality by analyzing the role of income. Data used from the 1993 Project for Statistics on Living Standards and Development (PSLSD) gave in detail the level and texture of inequality that was prevalent at the end of the apartheid regime. Recent data used from the National Income Dynamics Study (NIDS) from 2008 and 2014 assess the role of the different income sources and the overall inequality and compare those contemporary snapshots to the results from 1993 (Hundenborn *et al.*, 2016:3).

By applying two different decomposition methods to inequality as measured by the Gini coefficient the role of income sources that are driving income inequality at each of the three points in time and secondly explaining the role of the changing income sources of income inequality over time are measured and verified. Over the past 20 years it has been found, that the major contributor to the overall inequality was the labour income. Results indicated a drop in inequality from the labour market sources led to a decrease in the overall income inequality. The dynamic decomposition allows for extracting the effect of changes in household demographics on inequality from these results. These factors have shown that when household compositions are accounted for, then the changes in the different income sources have led to a decrease in inequality during the period of 2008 and 2014 particularly over the post-apartheid period (Hundenborn *et al.*, 2016:3).

In recent years South Africa's economy remains one of the highest inequality rates in the world with a 0.63 Gini coefficient in 2015. Thus, indicating that inequality has been persistent since 1996, with an increase of 0.61. Since the high inequality are perpetuated by economic growth this in turn does not generate sufficient jobs for the countries populace. Though the inequality in wealth is higher in the country 10% of the population held around 71% of the net wealth in 2015. The bottom 60% of the population held 7% of the net wealth in the country. This highlight's that mobility is low thus meaning that inequality is then passed on from generation to generation with almost little change in inequality over time. However, not only lags South Africa its peers of inequality and poverty but also on the inclusiveness of consumption (World Bank South Africa, 2019:2).

Finn and Leibbrandt (2017:3) investigated the dynamics of poverty in South Africa through analysing the determinants of South Africans moving into and out of poverty over the first four waves of the National Income Dynamics Study (NIDS) for the years 2008 to 2014/2015. The study focuses on the balanced panel of NIDS respondents and has thus found that a relatively high poverty exit rate was accompanied by a substantial proportion of the population thus being trapped in severe poverty. Increasing income from government grants is the main trigger precipitating poverty exit for about one quarter of the sample. It has been found that by ignoring the correlations between the unobservable affecting initial conditions, sample retention and poverty transitions can lead to substantially biased results, thus by underlying the poverty dynamics. By preventing people from falling into poverty in the first place is likely to yield greater returns then targeting the individual of poverty directly.

2.3 REVIEW STUDIES OF INTERNATIONAL POVERTY LINES

In 1985 the \$1-a-day international poverty line purchasing power parity (PPP) stood at \$1.02 a day and was originally chosen as a representative of the poverty lines in use of low-income countries. During 1993 it was updated using an expanded set of PPP price comparisons to give a poverty line of \$1.08-a-day which continued to be labelled as \$1-a-day. Thus, by revising the line due to under-estimation of the cost of living in poor countries in the price surveys used to estimate the PPP exchange rates for currency conversions. Setting new national poverty lines for the low- and middle-income countries has been used to give a new international poverty line of \$1.25 in the 2005 prices. This line was used for monitoring progress against the Millennium Development Goals since the \$2 a day line has also been used in addition to the \$1 line (Barnes et al., 2017:19).

According to Barnes, Hallb, Sambub, Wrighta and Mkabilec (2017:19), it has been argued that the international poverty lines are useful for international comparability, but they are particularly not appropriate since it is very minimalist and is based on poverty lines from low income countries. And it is also not anchored into a countries' specific basket of goods, since it's difficult to know exactly what such an income would allow an individual to buy into South Africa.

Ravallion (1991), states that: "The international measure [the \$1 a day poverty line] is not intended to replace national poverty lines. When measuring poverty and discussing appropriate policies in a specific country one should naturally use a poverty line considered appropriate to that country, which need not accord with our international poverty line".

Dieden and Gustafsson (2003) made use of the \$1 a day, to define poverty as referring to children meeting the definition of "extremely poor". The \$1 a day to definine poverty has also been used by (Hall & Wright, 2016; Hall & Sambu, 2016).

According to Barnes, Hallb, Sambub, Wrighta and Mkabilec (2017:19), the use of the \$1.25 a day poverty line is to monitor the global progress by eradicating extreme poverty by 2030, which is central to the Sustainable Development Goals (SDGs). The post-2015 agenda has replaced the Millennium Development Goals, since the Sustainable Development Goals (SDGs) are more comprehensive than the Millennium Development Goals (MDGs), which include 17 goals and 169, targets since it aims is to end all forms of poverty. By using 2011 United States purchasing power parity (PPP) the poverty line has been updated from \$1.25 a day poverty line to \$1.90 per person per day. Thus, adding to this line an additional two indicators are used to monitor poverty rates, namely: the proportion of a population living below a national poverty line and the proportion of men, women and children living in all forms dimensions of poverty according to the national definitions.

2.4 LABOUR MARKET TRENDS IN POST-APARTHEID SOUTH AFRICA

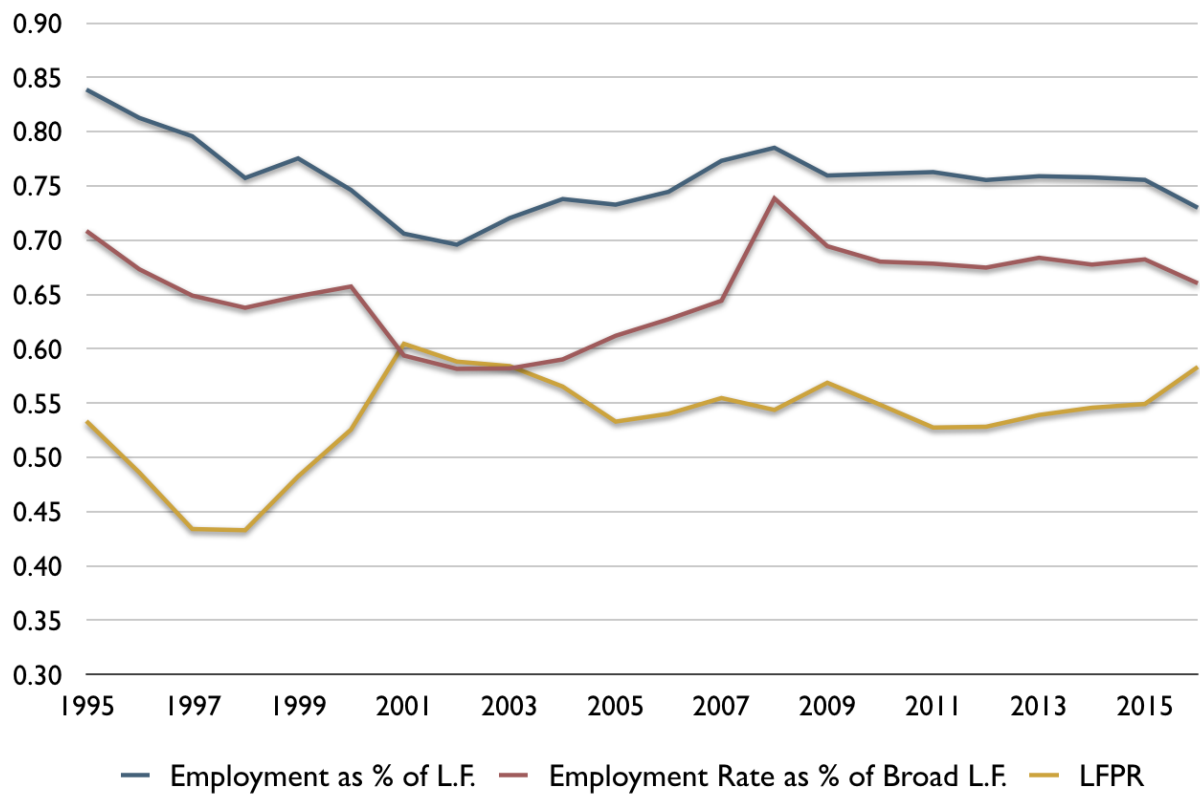
According to Bhorat and Khan (2018:2), the labour force of South Africa has been characterized by high levels of unemployment, low participation, with a large number of discouraged unemployed. The figure below indicates the economies consistent inability to generate sufficient jobs for the unemployed. Since 2001 the country has had a fairly steady labour force participation rate (LFPR).

As noted in Figure 1 below is the effect of the onset of the political democracy on the labour force participation rates in South Africa. Since 1995 the labour force participation rates (LFPR) increased sharply from 54.7 percent to over 60 percent in 2001. With the new post-apartheid labour market the South African workers are now free to move around in the country in search of employment in urban areas. Since then there was a significant increase in the LFPRs after the apartheid years ended the pent-up of the labour supply. Despite the growth in participation rates, the country continues to struggle to generate a sufficient number of jobs in the economy.

Table 1 illustrates that, since 1995 the employment as a share of the labour force has decreased by 8 percentage points, and in 2015 to 76 percent. Over the same period the national unemployment rate has increased by 8 percentage points to 24 percent. By including the non-searching unemployed in 2015 the share of the labour force employed has dropped to 68 percent with an estimated 32 percent unemployment rate. Figure 1 illustrates that in the post-2008 period the number of discouraged worker-seekers appear not to grow, since the non-searching unemployed represents 2.3 million people unabsorbed by the labour force (Bhorat *et al.*, 2018:2).

Structural Change and Patterns of Inequality in the South African Labour Market

Figure 1: The LFPR and Employment Rate in South Africa, 1995-2016.



Source: Post-Apartheid Labour Market Series (1995-2016), Authors' calculations.

Table 1: Employment and Unemployment Rates, 1995-2015.

| Category | 1995 | 2000 | 2015 |
|--|------|------|------|
| Employment as % of labour force | 84 | 75 | 76 |
| Strict unemployment (%) | 16 | 25 | 24 |
| Strict labour force | 100 | 100 | 100 |
| Expanded employment as % of labour force | 71 | 66 | 68 |
| Expanded unemployment2 (%) | 29 | 34 | 32 |
| Expanded labour force | 100 | 100 | 100 |

Source: Labour Force Survey (1995, 2000 & 2015), Authors' calculations

2.5 GOVERNMENT SOCIAL SPENDING

In April 1998 the child support grant (CSG) was introduced to eligible caregivers for example to parents, grandparents, guardians, etc. by means of a cash transfer. This has been government's most successful anti-poverty interventions. By the end of March 2014 more than 11 million child beneficiaries received child support grants. Various studies have pointed to the significant role played by the child support grant including the old age pensioner by reducing the number of poor people in post-apartheid South Africa (Coetzee, 2014:1).

In the mid-1970's social spending inequalities were substantially reduced (Van der Berg 2001, 2006, 2009). The government social spending per person has increased from 1995 to 2000 by 21% and within the first six years by a further 40%, as the spending became much better targeted since the political transition. As a middle income country the social spending is well targeted for the poor. Since the targeting occurs by means of social grants and poorer people's children who benefit from public school spending, the rich largely avoid using public health facilities, thus leaving a large share of the benefit with the thought of a poor quality of service to those who cannot afford. This improved the shift in targeting the social spending programme by means of social grants (Van Der Berg, 2010:17).

As these fiscal shifts occurred there was a large increase in spending on the poorest quintiles, the major beneficiaries being economically disadvantaged. The spending per capita on whites in the mid 1970's was nine times more than what was spent per capita on blacks ((R4 795 versus R564, in 2000 Rand terms), as the spending per capita on blacks are now twice as much as on whites (R3 013 versus R1 568), (Van der Berg 2009). The high unequal income distribution in the market cannot compensate for the massive fiscal redistribution. The quality of government services is often poor and limits the fiscal to redistribute the nature and capacity constraints in the state apparatus (Van Der Berg, 2010:17).

Table 2: Shows the characteristics of households and caregivers of children who have been receiving the grant for different proportions of their lives. The characteristics of the households appear to be very similar for all three groups of recipient children. All the groups are from poor households. Less than a fifth of the working-age adults are employed and have limited access to basic amenities (Coetzee, 2014:1).

Table 2: Characteristics of households and caregivers for different grant exposure levels, 2008

| Received CSG 0-33% of child's life | Received CSG 34-66% of child's life | Received CSG 67-100% of child's life | Are the differences significant? |
|------------------------------------|-------------------------------------|--------------------------------------|----------------------------------|
|------------------------------------|-------------------------------------|--------------------------------------|----------------------------------|

Household characteristics

| | | | | |
|--|-----|-----|-----|-----|
| Proportion with access to electricity | 71% | 76% | 74% | No |
| Proportion with access to piped water | 61% | 61% | 59% | No |
| Proportion with access to landline | 9% | 8% | 8% | No |
| Proportion with access to a flush toilet | 33% | 36% | 35% | No |
| Per capita expenditure | 411 | 492 | 409 | Yes |

Caregiver characteristics

| | | | | |
|----------------------------|------|-----|-----|-----|
| Proportion employed | 16% | 15% | 18% | No |
| Average years of education | 7.4 | 8.2 | 8.4 | Yes |
| Average age in years | 39 | 37 | 40 | Yes |
| Delay in application for | 1180 | 832 | 299 | Yes |

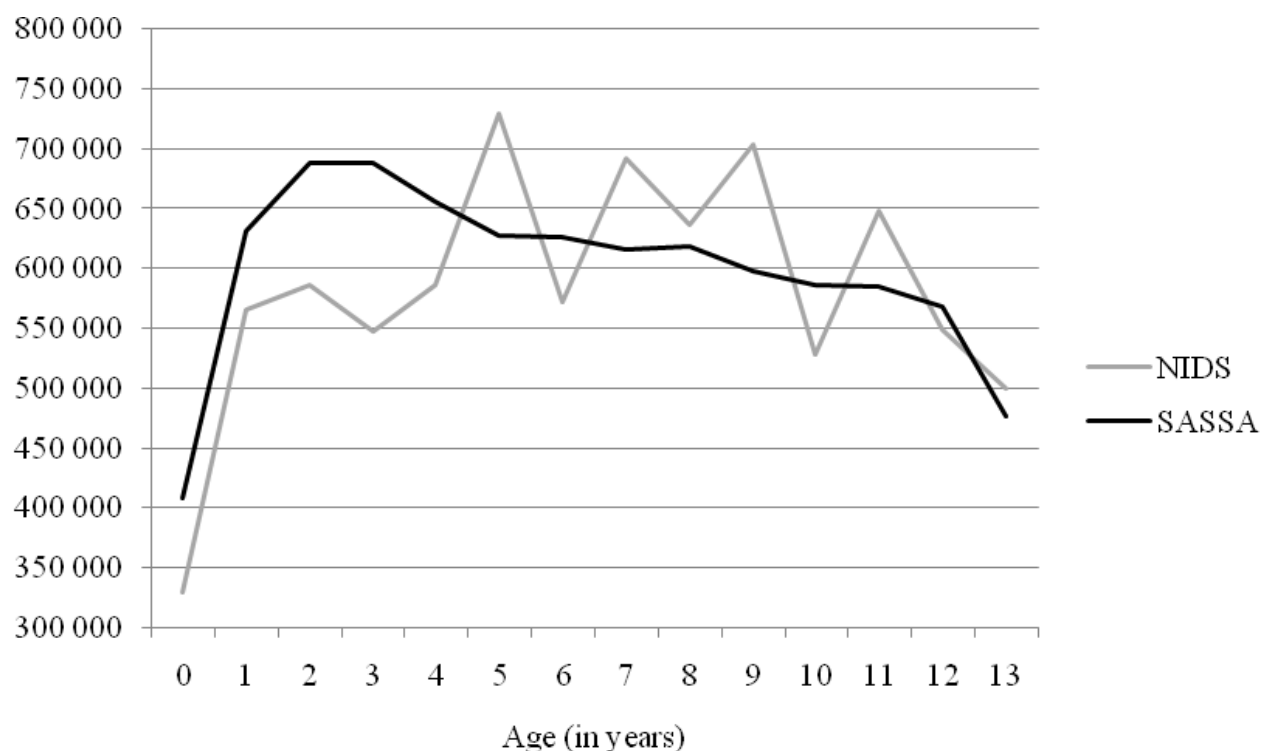
CSG (days)

| | | | | |
|------------|-------|-------|------|-----|
| Motivation | -0.25 | -0.14 | 0.46 | Yes |
|------------|-------|-------|------|-----|

Data from National Income Dynamics Survey (NIDS) 2008. Average values. Significance at 1%.

The effectiveness of the child support grant (CSG) remains for the children in need of it and who are not receiving the grant but ineligible children and adults who are receiving the grant by error. As illustrated by Figure 2 below it shows the difference by age between the number of children reported by the South African Social Security Agency (SASSA) and by NIDS. Figure 2 also illustrates similar trends across ages as shown in the two trend lines below. In the reporting receipt there could be some of those children who should not be receiving a grant. In order to estimate how many children were eligible to receive the child support grant (CSG) a simple simulation means test was done based on age eligibility criteria. The simulation means test suggests that a small number of children who are not eligible are receiving a grant (Leibbrandt et al., 2010:58).

Figure 2: Number of children receiving Child Support Grants



Source: NIDS, 2008 and SASSA, special request

2.6 WEALTH AND INEQUALITY IN SOUTH AFRICA

The work of (Mbewe and Woolard, 2016:3) discussed the cross-sectional features of wealth inequality in South Africa, as the evidence shown from The National Income Dynamics Study called (NIDS). Thus, by examining the cross sectional distribution of wealth in South Africa in using survey data from the National Income Dynamics Study (NIDS) for the period of 2010 until 2011 by using wave 2 and for the period of 2014 until 2015 in using wave 4. The results of NIDS have shown that wealth inequality in South Africa is very high, with the bottom half of the population owning very little wealth and the top decile holding about 85 percent of the total wealth for the period of 2010 to 2011 as well for the period of 2014 until 2015. The results have also shown that wealth inequalities within race and between races are very high, and particularly dominant in the black race, with a greater concentration of the black population being at the bottom end of the wealth distribution. The typical black household holding is relatively owning less than 5% of the wealth compared to a typical white household in SA. What was found is that wealth varies significantly over the age profile of race.

According to Ranchhod (2013:1), the South African labour market has been shown to be a key determinant of welfare, both in terms of poverty and inequality. Though welfare derives from the labour market little has been relatively understudied to date, as the amount of volatility in earnings that various groups of South Africans has experienced over time, had a direct implication for welfare as well as for inequality.

The use of the first three waves of data from the National Income Dynamics Study (NIDS) will be used to describe the amount of earnings volatility experienced by the different demographic groups. The regression model estimates the partial correlation between the various characteristics that were used and the earnings volatility. The findings indicate that earnings volatility is high over a four-year interval. Showing thus how much volatility is there in earnings in South Africa as the means within person standard deviation in earnings across the three waves lies at about 50 percent to 66 percent of the mean earnings depending on the time period.

2.7.1 INEQUALITY CHALLENGES TO DEMOCRACY

South Africa's economy has recorded one of its longest periods of positive economic growth during the country's first decade of democracy. The vexing issues in the country within the economic policy terrain in post-apartheid South Africa has been the impact of its consistently positive growth performance on social welfare, specifically on income poverty and inequality.

The potentially harmful consequences of persistently high levels of poverty and economic inequality, is the quality and sustainability of democracy (Bermeo, 2009; Kapstein & Converse, 2008 and Wells & Kriekhaus, 2006). Thus, the high levels of inequality have been linked to tendencies such as a decreased in voter's turnout, political engagement and high levels of crime rates. This all can have a negative impact on the quality of democracy. The increase levels of income inequality also have the potential to divide citizens and contribute to social conflict. In turn such a situation can have diverse pressures on government and lead to politicians resorting to surreptitious tactics such as "playing some voters off against each other" (Bermeo, 2009).

2.7.2 REVIEW STUDIES OF INEQUALITY CHALLENGES TO DEMOCRACY

Wells and Kriekhaus (2006) analysed a range of individual personal characteristics and attitudes as well national economic and political variables that influence democratic support in a sample of 35 countries by including countries such as Western and Eastern Europe, Latin America, Asia as well as South Africa. The key findings were that economic inequality has a highly significant, negative influence on citizens' willingness to support democracy.

Kapstein and Converse (2008) are of the opinion to investigate the democratizations between 1960 and 2004 in 88 different countries and found that inequality was significantly higher in democracies that eventually underwent a reversal (democracy failed). Thieve concluded that economic growth is not enough to ensure the sustainability or consolidation of a democracy. And to the extent to which economic growth has benefited all citizens is the key to the sustainability of democracy. The survival of a democracy is the distribution of income, assets and opportunities, however they, recognise that other factors also contribute to the survival of a democracy, including the quality of political institutions.

Fukuyama (2008) is of the opinion to investigate the role of high levels of inequality in the destabilisation of politics in Latin American democracies over the past decade. By discussing numerous examples where a persistent level of inequality has given rise to disruptive social movements and social conflict. An article focusing on democracy in Africa, Lewis (2008) describes the phenomenon of "growth without prosperity" in Africa's new democracies and thus warns that the divide between popular expectations and economic realities can harm the consolidation of a democracy in these countries

2.8 REVIEW STUDIES OF SAVINGS AND INVESTMENT ON ECONOMIC GROWTH

According to Jagadeesh (2015:13), several studies have been conducted on studying the relationship between savings and economic growth in developing countries, which are mostly connected in Sub-Saharan, Latin American and East Asian countries.

Lean and Song (2009) analysed the relationship between economic growth and savings in china by using Johansen cointegration and granger causality. They found that a bilateral causality exists between the household savings and economic growth in short run and in the long run unidirectional causality which exist from the economic growth to savings growth. Liu and Guo (2002) investigated relationship between the GDP and savings using the quarterly data from 1990 to 2001 in china and found that GDP granger causes the household saving growth. Tang & Chau (2009) also conducted a study based on the relationship between savings and growth in Malaysia by using nonparametric cointegration test and DOLS method. They found that savings and economic growth is cointegrated and positively related in the long run so the study indicates savings is an engine to economic growth through its impact on capital formation.

In the case of Cambodia, Seng Sothan (2014) investigated the causality between domestic savings and economic growth. The study does not find any casualty between gross domestic saving (GDS) and Growth and concluded that GDS and Economic growth are independent of each other in Cambodia. Romm (2005), adopted to use the Johansen VECM estimation technique to study the relationship between Growth and Savings in South Africa. The study confirmed that private saving rate has a direct as well as an indirect effect on economic growth.

Oladipo (2009), adopted the Toda and Yamamoto methodology to analyse the direction of causal relationship between savings and economic growth in Nigeria between 1970 and 2006 the findings revealed that a unidirectional causality exists between savings and economic growth. But the result from the study was different from what others had proved in this area, Nurudeen (2010) found out causality run from economic growth to saving, implying that economic growth proceeded and Granger causes saving. Adeleke AM (2014) revealed that there is bi-directional causality that exists between Savings and Economic Growth in Nigeria. Bakare (2011) used OLS Multiple Regression analytical method in the economy of Nigeria to examine the relationship between capital formation and economic growth; the test proved that the growth rate of national income was positively related to savings and capital formation, so

the study emphasised the need for the government to encourage savings to promote sustainable growth in the economy.

According to Festus (2011), it has been found that investment has a statistically significant positive impact on short run and long run economic growth in Namibia. Mphuka (2010) investigates the causality between savings and economic growth in Zambia by using the bivariate vector auto-regression (VAR) estimation procedure. The test indicates that economic growth granger causes savings, even though the article argues that savings may influence the economic growth indirectly, because the savings will cause accumulation of capital and inject the technologies from developed countries, in fact the technologies are key to economic growth.

Mandishekwa (2014) studies the casual relationship between investment and economic growth based on Zimbabwe and the findings have revealed that there is no causality from any direction between the two variables. However, the study does not deny any other relationship between the investment, savings and economic growth.

Odhiambo (2008, 2009) conducted a study in Kenya in 2008 and in South Africa in 2009 on the relationship between savings and economic growth in these two countries. He used causality and co-integration test to analyze the relationship between the variables and the study proved that there is a positive relationship between savings and economic growth.

Ibrahim and Francis (2000) analyzed savings process in Sub-Saharan Africa with the experiences of Kenya, Zimbabwe and Botswana. The results of the study showed that in SSA causality runs from growth to the investment while savings granger causes the increase in investment; the study also mentioned that Botswana is a country with lower private saving rate.

Anorou and Ahmad (2001) investigated the relationship between savings and economic growth in seven (7) African countries, Congo, Cote d'ivoire, Ghana, Kenya, Nigeria, South Africa and Zambia using vector error correction model. The result indicated that there is a long run relationship between economic growth and savings. They also found that savings granger causes growth in Congo and there is bi-directional causality in South Africa and Cote d'ivoire.

Mohan (2006) addresses the relationship between domestic savings and economic growth for various economies with different income levels. The study used time series data on almost 20 countries with different income levels to investigate the relationship between the domestic savings and economic growth for various economies. Empirical results suggest that the economic growth rate Granger causes growth rate of savings in 13 countries. The results prevailed in two countries, Indonesia and Singapore; savings granger caused economic growth. In five countries, a bi-directional causation was found. In LICs the direction were mixed. In most of LMCs, the causality is from economic growth to savings growth. In all HICs except Singapore, the causality is from economic growth to growth of saving. Overall results show that causality is from economic growth to domestic Savings; the main conclusion of the study is that income class of a country plays an important role in determining the direction of causality.

2.9 DETERMINANTS OF HOUSEHOLD SAVINGS AND INVESTMENT IN SOUTH AFRICA

Zwane and Greyling (2016:2) investigated on the determinants of household savings in South Africa for the period of 2008 to 2012. Tracking the changes in individual's livelihood over time by using three waves of the first national representative longitudinal survey of the National Income Dynamics Study (NIDS). The data is available in a panel format which can be used to investigate the structure and impact of different aspects of socio-economic factors pertaining to household savings in South Africa, which are driven by income, age structure, education achievement as well as employment status. By achieving a high economic growth at a country level national savings are often seen as an instrument (Kudaisi, 2013; Amusa, 2013; Obayelu, 2012). The higher the savings rate in a country the more it will lead to investments and in turn the more investments will give rise to employment, industrial growth and economic development (Rehman et al., 2011; Ogbokor and Samahiya, 2014; Suppakitjarak and Krishnamra, 2015).

Since the 1990s low household savings have been the leading characteristics of the South African economy (South African Reserve bank, 2012; Chipote and Tsegaye, 2014; Simlet, Keeton and Botha, 2011). In the 1990s household savings in South Africa as a percentage of the gross domestic product (GDP) stood at 1.63% and decreased to 0.35% between the year 2000 and 2005. During the year of 2006 and 2008 these figures decreased to 0.63% thus improving its net value on an average of -0.20% during 2009 and 2011. According to (Simlet

et al., 2011:1-19), low savings act as a barrier to economic growth and development, thus putting pressure on the country's current account.

2.10 SAVING TRENDS IN SOUTH AFRICA

Thus, domestic savings rate has declined steadily over the last 50 years from an average of just more than 24% between 1960 and 1990, to 16.5% from 1991 to 2014, and just 16% over the last decade. In comparison to developing country such as China's who's saving rate is about 40% of GDP (Ndweni, 2016:1). The primary driver of low-income household savings rate is driven by the country's exceptionally high unemployment rate (Precious & Asrat, 2014:183).

Putting money aside for short term emergencies and even for retirement has proven to be too difficult for most South Africans. Most South Africans in low income groups and middle-income groups have no plans to save and no regular saving plans at all. About 72% of adult South Africans are not saving at all, and about 80% have not even changed their saving plans or increased their savings plans (Chiroro, 2010:2).

According to Chiroro (2010:3) the consumer's lack of faith in financial advisers and brokers in the financial system has affected individuals and household's attitudes towards savings. Most income groups do not trust financial advisers and brokers whom they feel only cares about securing a high commission for themselves. Financial institutions are being perceived to be self-centered and benefiting businesses more than the actual customer as most consumer's want to start saving but are being faced with complexed choices.

According to Van De Merwe (2018:1) the current economic conditions will make it harder for South African's to save for the future in turn they will need to save more. Though the savings levels of the working South Africans are relatively low at 15%, the gross rate of savings for the entire population stood at 3%, according to Old Mutual Investment Group (Omarjee, 2017:1). The Old Mutual Savings and Investment Monitor looked at surveys pertaining to the saving and investment behaviour and attitudes of the working South Africans who lived in the metros, the interviews consist of face-to-face interviewing 1000 South Africans. The results of the survey revealed that 15% of income goes towards savings as this has been consistent since 2015. In turn the low savings rate accompanied with the lower investment returns are not enough for the people of South Africa to settle down with at retirement (Omarjee, 2017:1).

The current saving rates are too low to fund the rates of investment that would require South Africa to achieve its target growth of 5.5%. Investment spending can only be funded out of savings, this can come from domestic funds or foreign capital flows, this shows that domestic saving especially household saving are the most functional. Though the GDP of South Africa grew over the past two decades, SA still lags behind emerging-markets such as Mexico, Indonesia, Nigeria, Turkey Brazil and China. This is an indication that SA's standard of living are improving, not at a rate as the other emerging economies (Ndweni, 2016:1).

2.11.1 SAVING BEHAVIOUR

According to McConnel (1999:178), the economic theory defines savings as that part of disposable income that is not consumed. Since the microfinance tends to focus on the demand of the poor for credit rather than on the importance of savings. Therefore, there is a relationship between savings and the demand for credit. Thus, having savings, it builds up as a lump sum of money you can access in the future. Whereby having credit which gives a person immediate access to the lump sum which is paid off by future savings (Moyo *et al.*, 2002:6). Having savings and credit are a means by which the poor have access to a lump of money which are greater than their average expected weekly or monthly income when the need does arise (Matin *et al.*, 2002:276). These needs can be categorised into three groups namely, life cycle needs, emergencies and opportunities (Matin *et al.*, 2002:276).

2.11.2 REVIEW STUDIES OF SAVING AND INVESTMENT BEHAVIOUR

According to Hanna, Fan, and Chang (1995) they presented a simple description of the normative life cycle model, and showed that expected future income patterns were important in optimal savings patterns. Pistaferri (2009) provided a review of some of the key predictions of the life cycle hypothesis and presented recent empirical evidence in consideration of the theory. Empirical research on household saving patterns has included a variety of measures of saving, including spending relative to a variety of measures of saving, including spending relative to income (Bae, Hanna, & Lindamood, 1993; Jayathirtha & Fox, 1996), with estimates that approximately 40% of households spent more than income, and therefore, about 60% of households spent the same or less than income. Chang (1994) used the change in real net non-housing assets as a measure of saving, and found that about 60% of households saved between 1983 and 1986. Lewis (1996) used the change in real net worth between 1983 and 1986 as measure of saving and found that about 52% of low income (less than 200% of poverty thresholds) households saved.

A survey conducted by The Survey of Consumer Finances (SCF) contains variables indicating whether the households spent more, less, or about the same as income and a number of authors have used the spent less than income as a proxy for saving. Yuh and Hanna (2010) tested whether households were behaving consistently with the normative predictions of a life cycle model with an analysis of the 1995-2004 SCF datasets. Education, income, net worth, owning a home, having health insurance, and expecting higher future income were all positively associated with saving.

Young households were more likely to save than otherwise similar middle age households, a seemingly puzzling result the authors explained based on normative theoretical issues and the fact that they controlled for income (Yuh & Hanna, 2010). Rha, Montalto, and Hanna (2006) investigated the SCF saving variable, testing for whether behavioural indicators affected saving, and concluded that some behavioural proxies helped explain saving behaviour.

Hogarth and Anguelov (2003) used institutional theory in their framework for examining saving behaviour among low-income households using the 1998 SCF. Specifically, they explored the poor's ability to save, the assets levels of the poor, and the determinants of being a saver (Hogarth & Anguelov, 2003). They found that the poor can save, but assets levels are very low. They identified the following characteristics as having the largest positive relationship to the likelihood of saving: reporting at least one reason to save, owning a bank account, no bad credit history, and longer planning horizons (Hogarth & Anguelov, 2003).

By analysing the importance of financial knowledge, Research has shown low-levels of financial knowledge among households with less education and lower incomes (Lusardi, 2008; Sherraden et al., 2010). The literature on financial service use suggests that low-income households have less access to low-cost banking services compared to middle and upper income households these findings is in contrast to studies by (Barr & Blank, 2008; Hogarth & O'Donnell, 1999; Seidman, Hababou, & Kramer, 2005) and less access to more modern types of banking (internet, electronic funds transfers, etc.) than otherwise similar but more educated, professional households (Worthington, 2007).

It has been found that many studies have used the institutional theory, or variations of institutional theory, to analyse saving behaviour, especially the saving behaviour of the poor. However, nearly all of these studies examined saving behaviour in Individual Development Accounts (IDA) programs (Han & Sherraden, 2009; Loibl, Grinstein-Weiss, Min, & Bird, 2010; McKernan & Sherraden, 2008; Schreiner & Sherraden, 2006). Although Hogarth and

Anguelov (2003) cited institutional theory in their framework, there is still insufficient evidence to conclude that institutions play a significant role in the behaviour of low-income households. Therefore, the purpose of this study was to explore, from a public policy perspective, which individual and institutional factors are important predictors of saving behaviour among low-income households.

2.11.3 Chapter Summary

The first democratic elections of South Africa were held in 1994 and brought much hope and believe of change and also equal opportunities for its population. The hope of a better life and the alleviation of poverty as well as inequality. A detailed description of what inequality was in the apartheid regime, was discussed in chapter 2. Thus, giving the reader a general perspective of inequality as data was used from the National Income Dynamics Study (NIDS) and data used from the Project for Statistics on Living Standards and Development (PSLSD). The researcher discussed the methods of inequality as measured by the Gini coefficient allowing the reader an insight into the major contributor to inequality was the labour income.

CHAPTER THREE

Research Methodology

3.1 RESEARCH DESIGN AND METHODOLOGY

Establishing theoretical models requires an extensive literature review for relevant conceptual framework and for empirical link between the variables under considerations, with close attention to determinants of savings and investment among low-income households in developing countries with a special case study of South Africa for the uniqueness of its economic characteristics. The proposed model shall draw a priori evidence from the following savings and investment theorist:

The economic theory in these situation posit a unique nature of savings and investment among low-income households (as discussed by Keynes (1937) (in Modigliani, 1986:298), Modigliani (1954) and Friedman (1957); and the most recent classification of Li and Spencer (2016) shall be reviewed to gain ideas on the determinants of low-income households. Although such an extensive literature review will provide a sound theoretical model, it may fail to assimilate the uniqueness at play in South African household savings and investment context, and will not result in a distillation of the actual factors affecting South African low-income household savings and investment.

Quantitative research procedure shall be adopted in this study. This will be based on observations that shall be converted into discrete units of which its inferences can be compared to other units by using econometrical analysis (Maykut, & Morehouse, 1994). As such, 'quantitative studies posit the measurement and relationships inferences between variables, not processes. Quantitative methods in this context shall emphasize objective measurements and the econometrical analysis of data collected through polls of surveys, using computational techniques to answer the research questions raised in the course of the study. By using semi-refined coded NIDS data by Data First, the procedure and transformation of response will be quantitative.

This research work made use of secondary data collected through primary source of Data First (which is a rich unique and first national representative longitudinal survey called the National Income Dynamics Study (NIDS), with an excellent track record on household's survey data collection over a long period of time) to explore the determinants of savings and investments among low-income households in South Africa.

National Income Dynamics Study (NIDS) was birthed a decade ago by the presidency's Policy Coordination and Advisory Services pivoted by different state departments, including the Statistics South Africa. Their first survey was conducted in 2008, with sample space of 7300 households and above 28 000 individuals across South Africa (SALDRU, 2009) The NIDS survey focuses on individuals and household's livelihood endeavours. The NIDS is administered by the University of Cape Town, while the South African Labour and Development Research Unit (SALDRU) is the implementing agency. The NIDS is a panel study of private individuals of all ages across South Africa and is designed as a biannual survey. Consequently, individuals who were interviewed in 2008 together are re-interviewed on a biannual basis – see www.nids.uct.ac.za for a detailed description of the NIDS. The longitudinal survey continues to be repeated with the same individuals every two years, collecting both demographic and socio-economic information.

The methodology applied in this study was to investigate the determinants of savings and investment among low-income households in South Africa. The presentation of the dataset and review with the most appropriate estimation methods, given the heterogeneity of South Africa and all other steps that are needed to draw a conclusion regarding the determining factors influencing savings and investment among low-income households in South Africa will be considered.

Following Horioka and Wan (2007), the paper uses household savings as a dependent variable, while other explanatory factors are drawn from the literature. As observed in the table 1 and the equation (1.6.2a and b) following the table, various explanatory variables used in this paper are discussed.

3.2 MODEL SPECIFICATION

The objective of this section is to formulate models that will assist in achieving the core and the specific objectives of the study. This present study, therefore, adopts and modifies the Adegbite and Adetiloye (2013) version of open model to include Household Income, Household Expenditure, Race, Household Size, Household Head Education, Investment and other relevant determinants of savings and investment as specified below:

$$HHS = F(HHIC, HHEXP, HHSZ, HHHE, RACE, AGE, GENDER) \dots\dots\dots (1)$$

$$HHI = F(HHIC, HHEXP, HHSZ, HHHE, RACE, AGE, GENDER) \dots\dots\dots (2)$$

In equation (1 and 2), savings (HHS) which is level of household savings calculated as Imputed Income minus Imputed Expenditure. Also, for investment (HHI) for each selected

household in South Africa, the right-hand-side variables which are the explanatory variables are: household income, household expenditure, household size, race, gender, age and age square (designed as quadratic function). All the variables shall be generated from NIDS data which is distributed through Data First Public Domain.

While the model in equations 1 and 2 indicates the determinants of savings and investment among low-income households in South Africa in a functional form, the estimable and econometric version of the model can be represented as follows:

$$S_{it} = \alpha_0 + \beta_1 HHIC_{it} + \beta_2 HHEXP_{it} + \beta_3 HHSZ_{it} + \beta_4 HHE_{it} + \beta_5 RACE_{it} + \beta_6 GENDER_{it} + \beta_7 AGE_{it} + \beta_8 AGE^2_{it} + \mu_i + \epsilon_{it} \dots\dots\dots (3)$$

$$I_{it} = \alpha_0 + \beta_1 HHIC_{it} + \beta_2 HHEXP_{it} + \beta_3 HHSZ_{it} + \beta_4 HHE_{it} + \beta_5 RACE_{it} + \beta_6 GENDER_{it} + \beta_7 AGE_{it} + \beta_8 AGE^2_{it} + \mu_i + \epsilon_{it} \dots\dots\dots (4)$$

Equation 3 is meant to examine the direct impact of household socioeconomic variables on the savings and investment among the low-income households in South Africa, where the number of the households in the countries capture in the model is ‘i’, while the number of periods is ‘t’. Although all the variables in equation 4 remains as earlier defined, the regression parameters are β and while α_0 is the individual household specific effect and is the regression disturbance term. Finally, we expect levels of savings and investment to respond positively to all the variant measure of external factors included in the model.

According to Baltagi (2008), panel data analysis provides a better understanding of most economic phenomena, which in most cases are dynamic in nature. Therefore, dynamic unbalanced panel is the best suited and, therefore, adopted method in the analysis. This is done by employing panel estimation and including the lag of the dependent variable as one of the independent variables. In the econometric literature, such a model is referred to as a dynamic panel model.

Table 3

Household Variables Characteristics Used in the Econometrics Model

| Endogenous variable | Description |
|-----------------------------------|---|
| Household levels of savings’ | household savings is defined as the proportionate part of household income that is not consumed (expenditure) |
| Explanatory/Independent variables | Description |
| HH-Income | household income is captured as the aggregated income by all individuals in the same household. |
| HH-Size | household size is the total number of members in the household |

| | |
|-------------|---|
| HH-Age | age of household head (in years) |
| HH-Employed | employment status of the household head (employed = 1 and unemployed = 0) |
| HH-Male | Gender of the head of the household (male = 1 and female = 0) |
| HH-province | household residing in western cape is the baseline |
| HH-Rural | Household residing in the rural area (1/0) |
| HH-Urban | Household residing in the Urban area (1/0) |
| HH-Farms | Household residing in the Farms (1/0) |
| HH-Black | Household with black dominated race is the baseline for this study |

3.3 SAMPLE METHOD

In this study, we wholly rely on data collected by NIDS which was reportedly used a stratified sampling method. With the stratified sampling method, the population is divided into a number of homogeneous non-overlapping groups called strata. This sample is used to address the problem of non-homogeneous populations, as it attempts to represent the populations precisely than can be done with simple random sampling (Maree et al., 2016:195)

3.4 ESTIMATION TECHNIQUE

In order to ensure that the empirical estimates from this study can be compared with those in the literature, the determinants of household savings and investment among low-income households in South Africa, equation 3.2 is estimated using all the three static panel estimation approaches, namely Pooled OLS, Fixed and Random Effects methods. The models are robust to heteroscedasticity and distributional assumptions with a framework that accommodates unbalanced panels and multiple endogenous variables. The study first estimates the determinants of savings among low-income households in South Africa, using the standard Pooled Ordinary Least Squares (POLS) method, Then Fixed Effect and Random Effect methods follow to correct for unobservable characteristics among the different households as the heterogeneity effect best captured by the fixed effect estimates, in case Pooled result in bias coefficients.

However, estimation of equations 2 by OLS raises some concerns, as it will fail to account for the potential endogeneity of the explanatory variables. Correlation between regressors and the disturbances violates assumption necessary for the consistency of OLS (there must not be correlation between regressors and disturbances) and consequent OLS will yield biased and inconsistent coefficient estimates. The endogeneity problem is a common problem in this situation going by the theoretical understanding of vicious cycle of poverty which states that low income will lead to low savings, low savings to low investment and low investment leads

to low productivity which ultimately lead back to low income. The self-perpetuating poverty problem makes every factor in the vicious cycle both cause and effect of another factor which is the main source of reverse causality. This poses a threat to the reliability of Pooled OLS estimates. There are two ways to work around this reverse causality problem.

This study, therefore, employed the Fixed-Effect method to reduce the upward bias associated with Pooled OLS when using panel data analysis. We also included an account for households-specific effects and tests, in which case empirical model is most suitable for analysing the determinants of savings and investment among NRH in South Africa. Given this, the Hausman test was used to choose the best specification among the Fixed and Random Effects models (Roodman, 2008). The Fixed method and Random Effect were chosen because of the specificity of the data since the data only have five waves and with a high level of attrition with wave 1, this made the dynamic model inappropriate and we are limited to static fixed effect and random effects. NIDS data well capture the trend in household income and other explanatory variables that can best explain the determinant of savings among NRH in South Africa.

3.5 Chapter Summary

A quantitative research approach will be adopted in this study and will be based on observations to be converted into discrete units of which its inferences can be compared to other units by using econometrical analysis. Secondary data will be used for this research study as data will be collected by the primary sources of Data First a representative of National Income Dynamics Study called (NIDS).

CHAPTER FOUR

Presentation, Analysis and interpretation of data

4.1 INTRODUCTION

This chapter deals with data analysis of the specified model in the previous chapter to answer the research questions raised in chapter one of the research work. The chapter starts with stylized facts before presentation of regression result estimated in the course of the study. The chapter ends with discussion of the results.

Table 4: Stylized Facts

| Group Statistics | | | | | |
|---|--------------------------------------|--------|------------|----------------|-------------|
| | Government Grant Receiving Household | N | Mean | Std. Deviation | T-Test |
| Number of household residents | 1. Yes | 119433 | 6.63 | 3.576 | 3644.143*** |
| | 2. No | 50138 | 4.12 | 2.567 | |
| Household monthly income - full imputations | 1. Yes | 119433 | 5330.3061 | 7292.06236 | 6915.622*** |
| | 2. No | 50138 | 11349.1268 | 28629.77609 | |
| Household monthly income from labour market | 1. Yes | 64982 | 4305.9786 | 6695.83806 | 7690.766*** |
| | 2. No | 35476 | 9982.9104 | 15545.31158 | |
| Household monthly income from government grants | 1. Yes | 102015 | 1629.4086 | 1254.84069 | 199.893*** |
| | 2. No | 11326 | 1270.3578 | 1114.62538 | |
| Household monthly income from investments | 1. Yes | 4969 | 2677.3276 | 4867.83583 | 59.371*** |
| | 2. No | 3153 | 10385.6768 | 86316.72386 | |
| Household monthly income from remittances | 1. Yes | 24230 | 1251.3755 | 2246.32481 | 94.062*** |
| | 2. No | 6888 | 1489.8932 | 2298.36724 | |
| Household | 1. Yes | 5398 | 2610.70 | 4644.020 | 67.023*** |

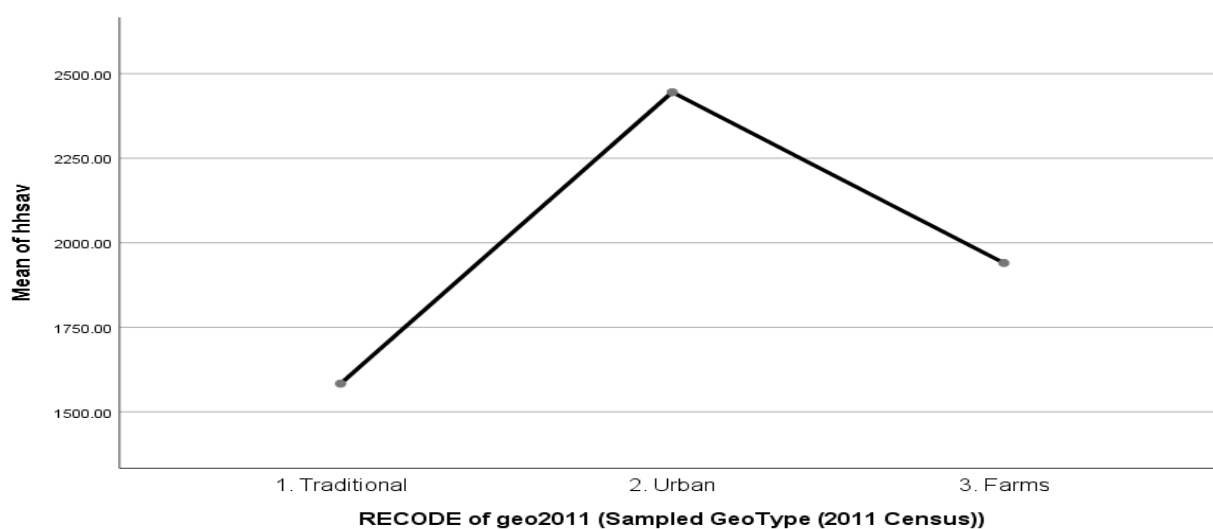
| | | | | | |
|---|--------|--------|-----------|-------------|--------------|
| monthly income from investments, no imputations | 2. No | 3157 | 10402.84 | 86268.768 | |
| Household Expenditure with full imputations | 1. Yes | 119433 | 3658.8517 | 5394.50821 | 16790.567*** |
| | 2. No | 50138 | 8489.4020 | 15306.58849 | |
| Household Savings | 1. Yes | 119433 | 1671.4544 | 6583.49564 | 1703.636*** |
| | 2. No | 50138 | 2859.7248 | 26345.48730 | |
| Log of Household Savings | 1. Yes | 89319 | 7.2416 | 1.32814 | 669.941*** |
| | 2. No | 34983 | 7.6920 | 1.50779 | |
| Expenditure per R1000 | 1. Yes | 119433 | 3.6589 | 5.39451 | 16790.567*** |
| | 2. No | 50138 | 8.4894 | 15.30659 | |

*** p<0.01, ** p<0.05, * p<0.1(level of significance)

The table 4 above indicates the descriptive and t-test comparative analysis of low income households and rich income households our analysis is majorly depends on Li and Spencer (2016) household classification which into two categories: Ricardian and Non-Ricardian households. The former (Ricardian) households comprise both medium and high-income households, which are involved in the financial market, participate in the buying of bonds or stocks, and are classified as the saving household. The latter (non-Ricardian) households comprise low-income households and largely depend on government welfare benefits to sustain themselves, which results in zero or negative savings. The Marginal Propensity to Save (MPS) of low-income households is very low, given that greater proportion of their incomes has to be spent on food items and other essentials.

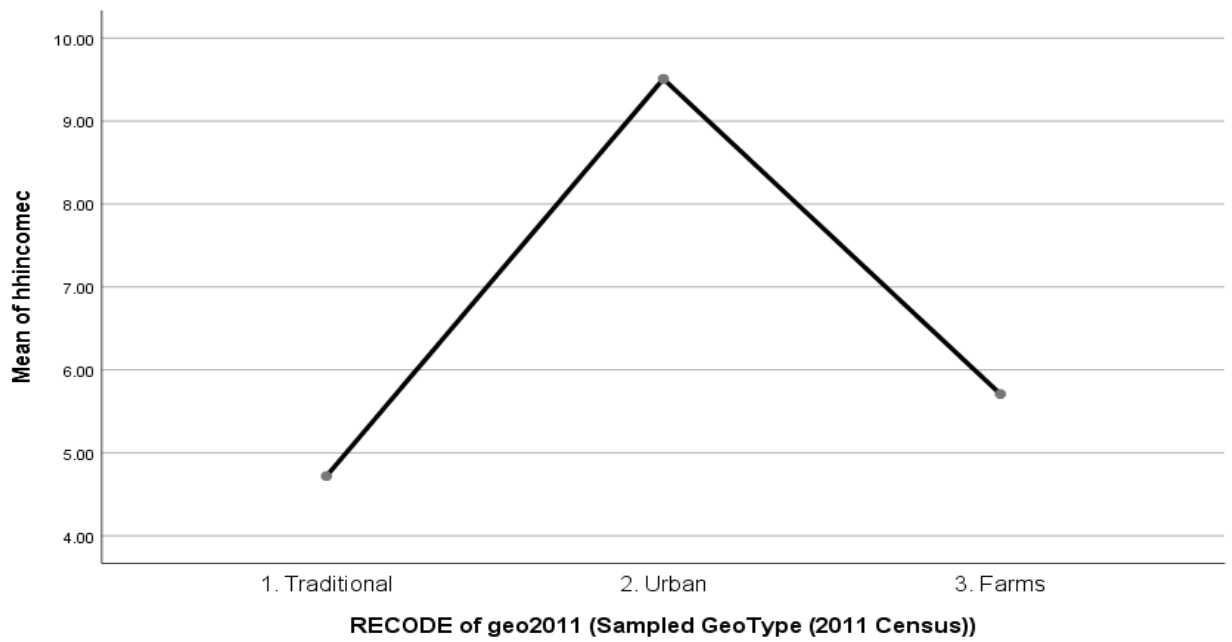
The table shows that the average adult members in the household are 7 while the rich households have average of 4 adult members' residing in the same household. The second row of the analysis shows comparatively analysis household income from various sources. The result shows that high income households with less household members are more than double richer than the low income household who have more household members. Household income from investment and labour market present the similar evidence with the full imputation explained above. Household expenditure shows that grant receiving household spend less than half of the high-income household.

Figure 3: Households savings across geographical location



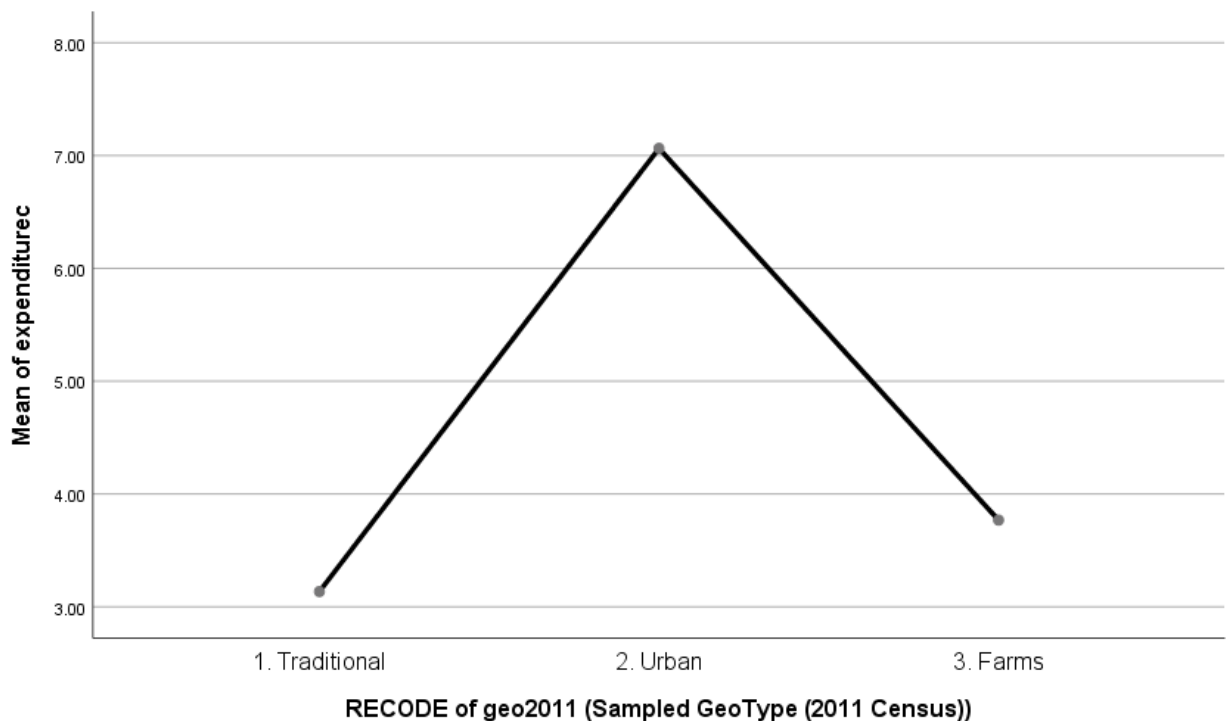
The figure 5 presents an analysis of households' savings across geographical location. The graph shows that NRH living in urban save significantly more than households living in the farm. While, households at traditional settlement have lowest savings on the average.

Figure 4: Households Income across geographical location.



The figure presents an analysis of households' income across geographical settlement. The graph shows that NRH living in urban save significantly more than households living in the farm. While, households at traditional settlement have lowest savings on the average.

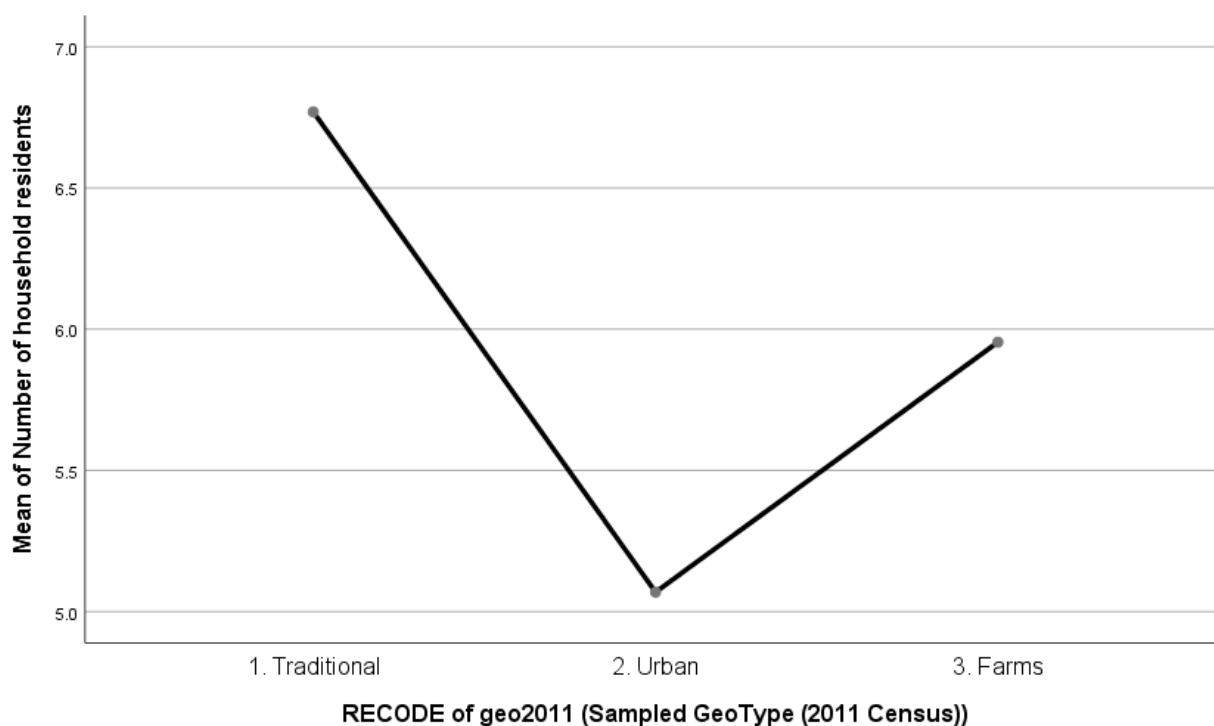
Figure 5: Households expenditure across geographical location.



The figure presents an analysis of households' expenditure across geographical settlement.

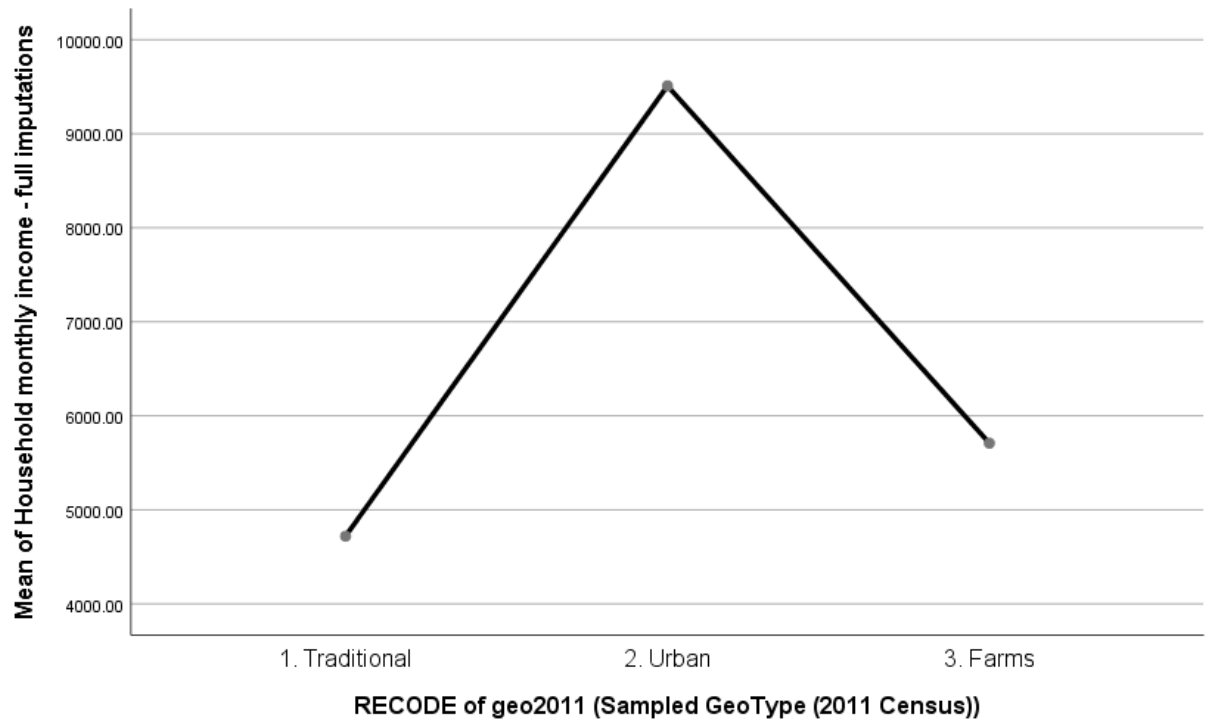
The graph shows that NRH living in urban spend significantly more than households living in the farm while, households at traditional settlement have lowest expenditure on the average.

Figure 6: Households residents across geographical location.



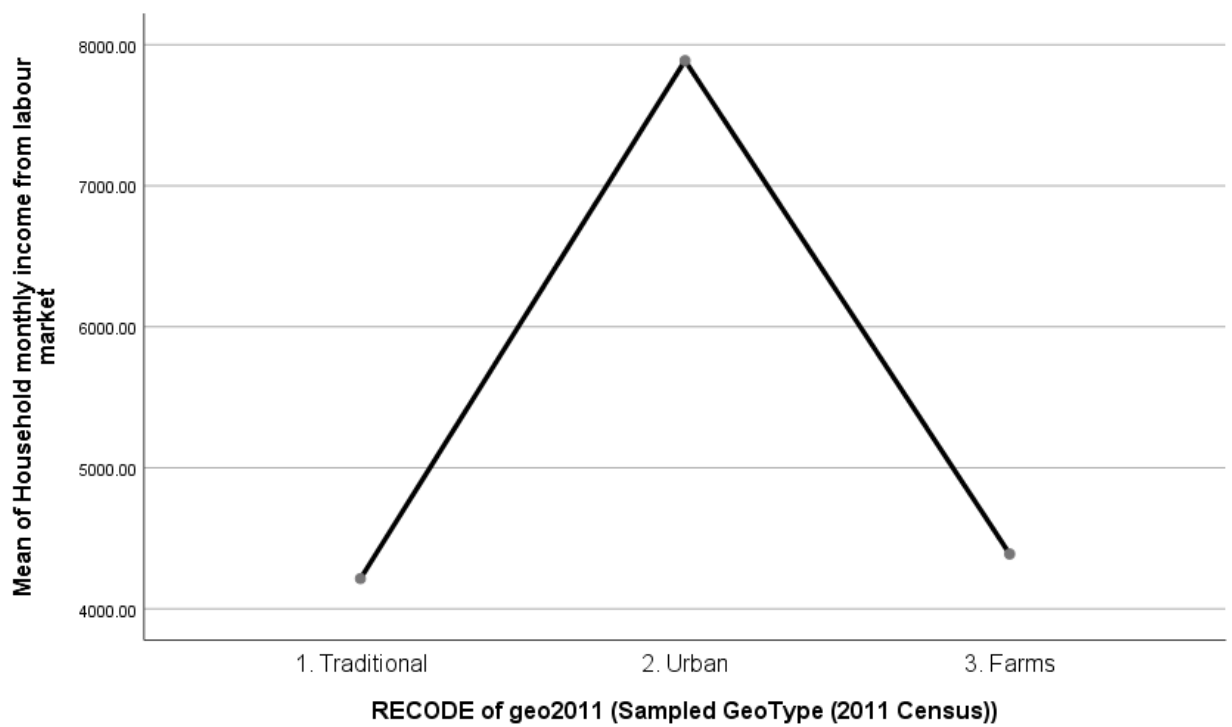
The figure presents an analysis of number of households' residents living across geographical settlement. The graph reveals that number of households' residents living in traditional location is significantly more than households living in the farm. Households at urban settlement have lowest household size on the average.

Figure 7: Households monthly income across geographical location.



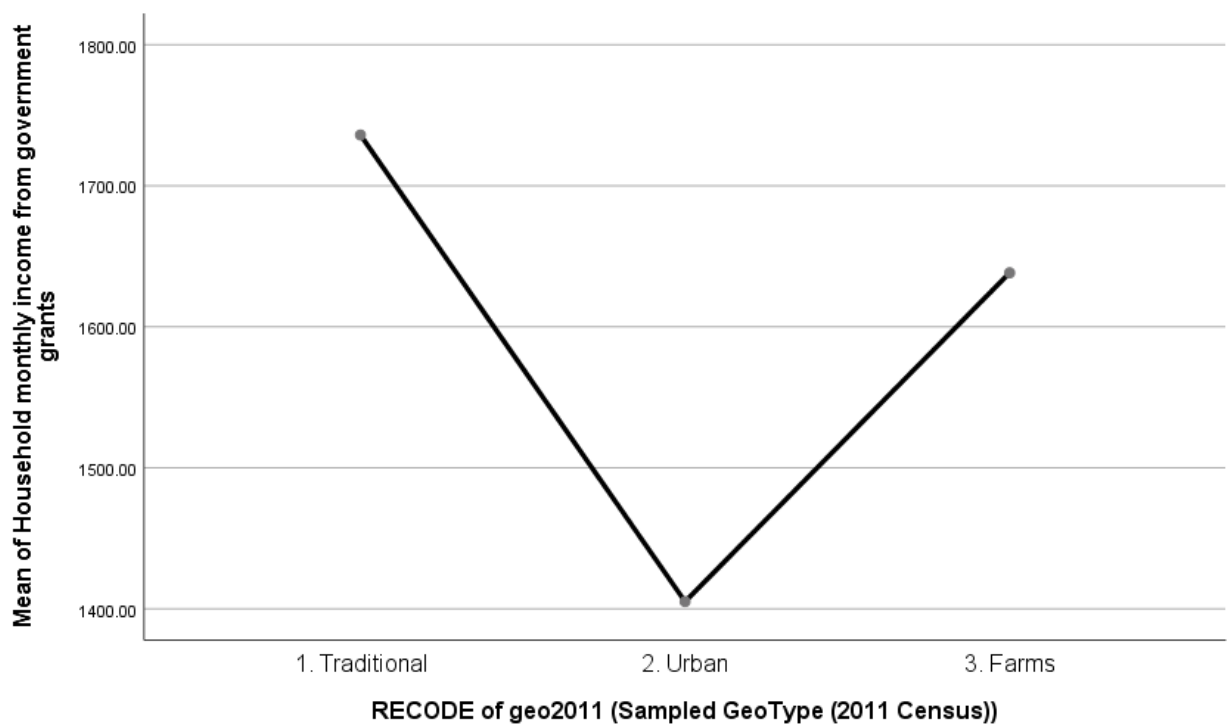
The figure presents an analysis of mean of households' monthly income across geographical settlement. The graph shows that NRH living in urban earn significantly more than households living in the farm on monthly basis. Also households at traditional settlement have lowest earnings on the average.

Figure 8: Households monthly income from labour market across geographical location.



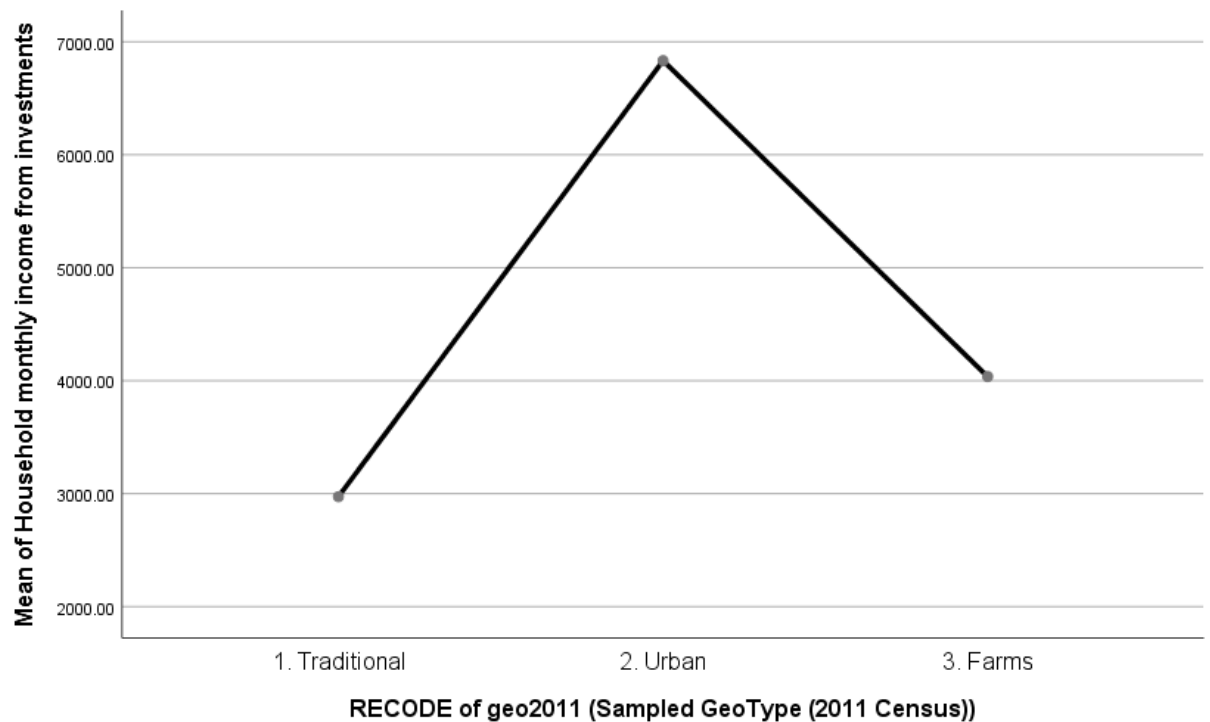
The figure above presents an analysis on the mean of households' monthly income from labour market across geographical settlement. The graph shows that monthly income from labour market earned by NRH living in urban is significantly more than households living in the farm. While, households at traditional settlement have lowest monthly earnings from labour market on the average.

Figure 9: Households monthly income from government grants across geographical location.



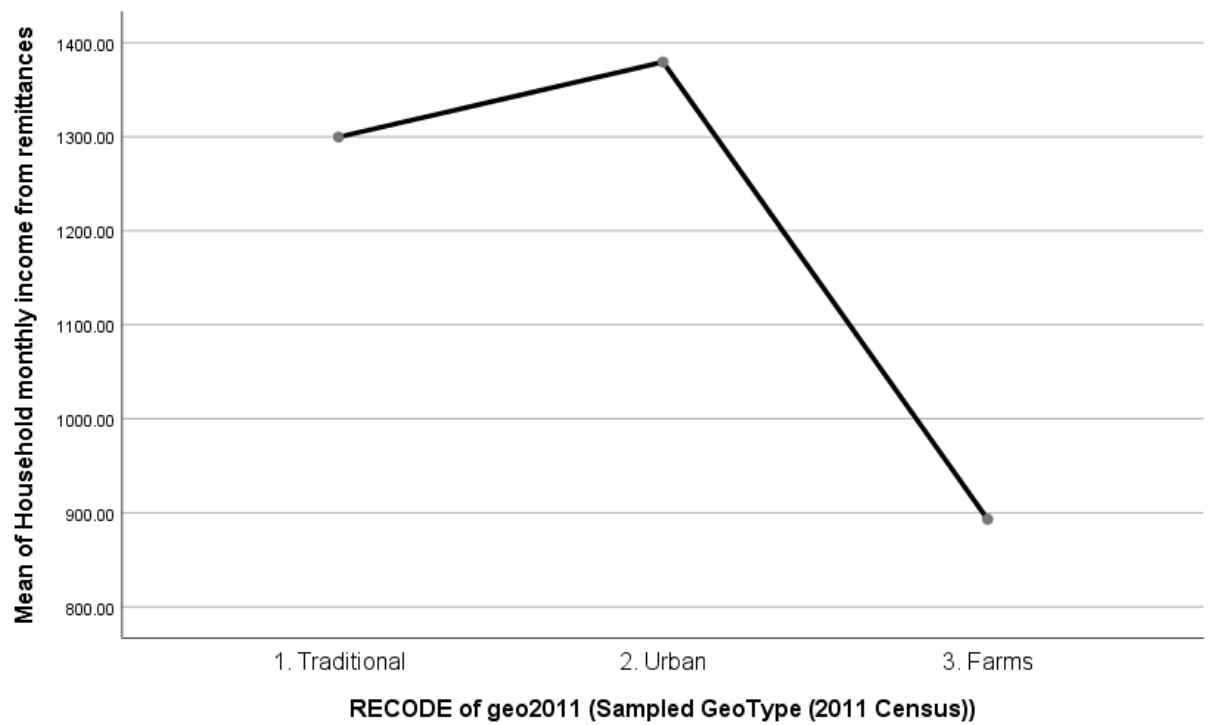
The figure above presents an analysis on the mean of households' monthly income based on grants received from government across geographical settlement. The graph shows that monthly income from government grants received by NRH living in traditional is significantly more than households living in the farm, while, households at urban settlement receive lowest monthly grants from government on the average.

Figure 10: Households monthly Income from investment across geographical location.



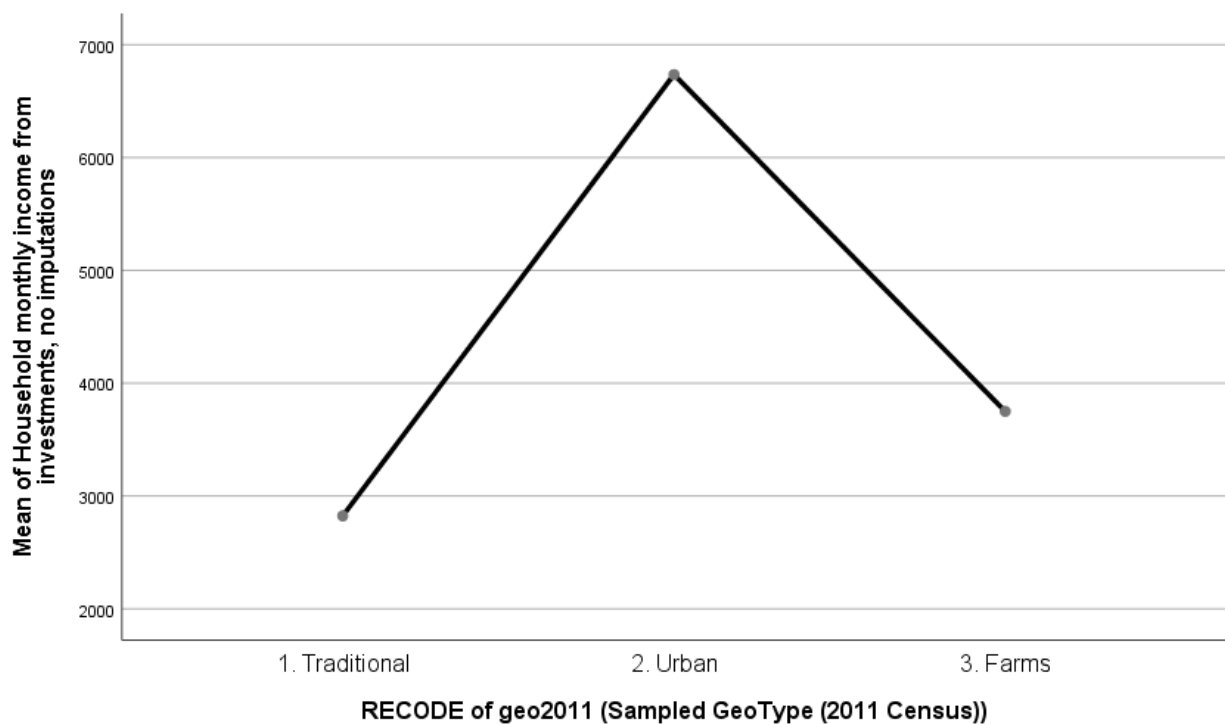
The figure above presents an analysis on the mean of households' monthly income from investment across geographical settlement. The graph shows that NRH living in urban earn significantly more than households living in the farm from investment on monthly basis. While, households at urban settlement earns lowest monthly income from investment on the average.

Figure 11: Households monthly Income from remittances across geographical location.



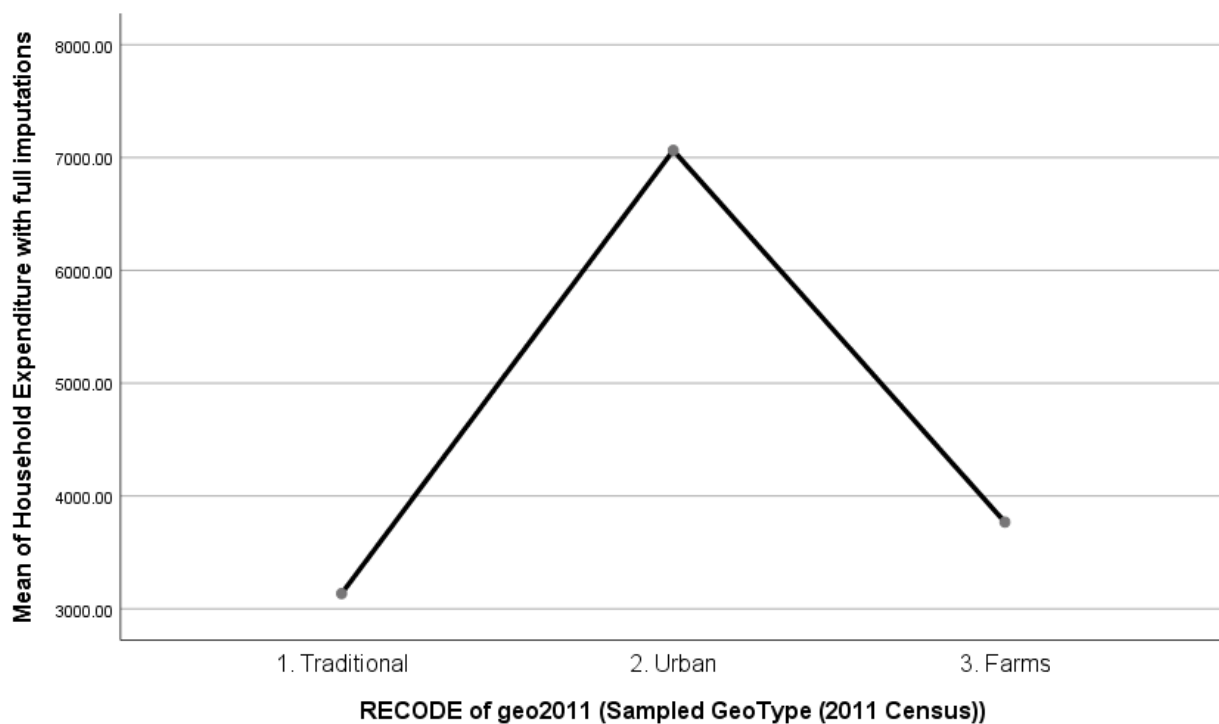
The figure presents an analysis of households' monthly income from remittances across geographical settlement. The graph shows that monthly income from remittances by NRH living in urban settlement is significantly more than households living in the traditional. While, households at farm settlement earn lowest income from remittances on the average.

Figure 12: Households Income from investment, no imputation across geographical location.



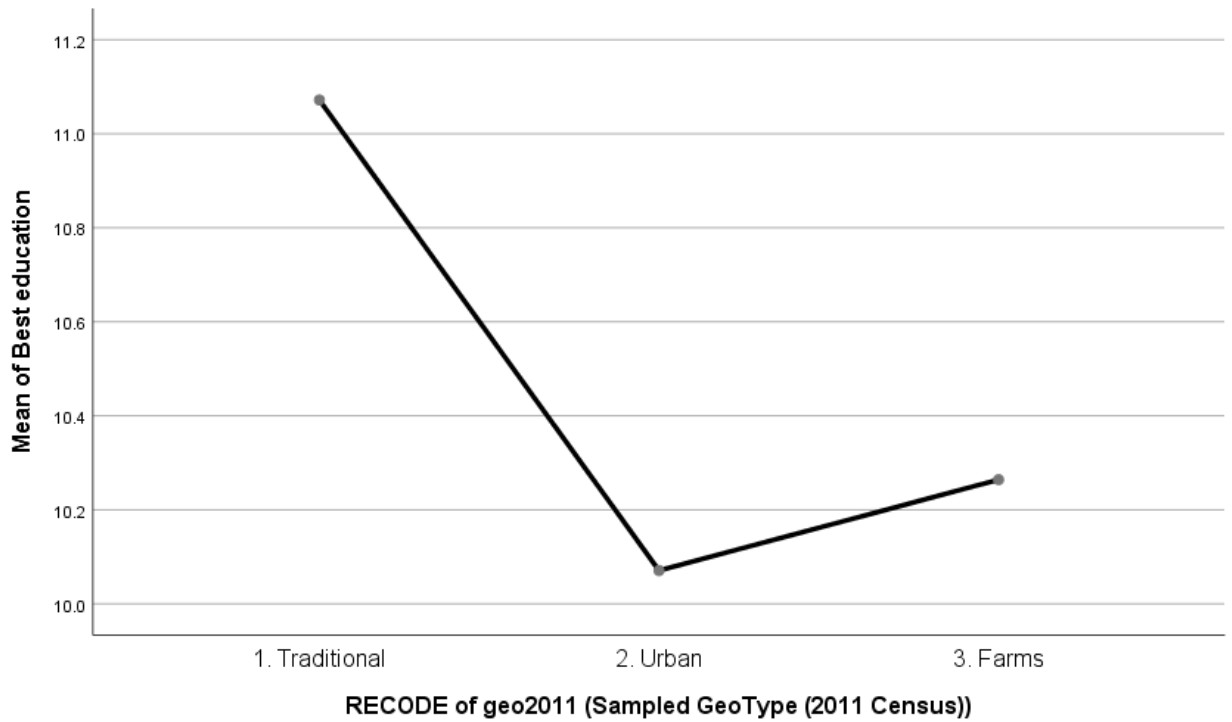
The figure presents an analysis of households' income for investment with no imputation across geographical settlement. The graph shows that the return on investment with no imputation of NRH living in urban is significantly more than households living in the farm. While, households at traditional settlement have lowest returns on investment on the average.

Figure 13: Households expenditure with full imputation across geographical location.



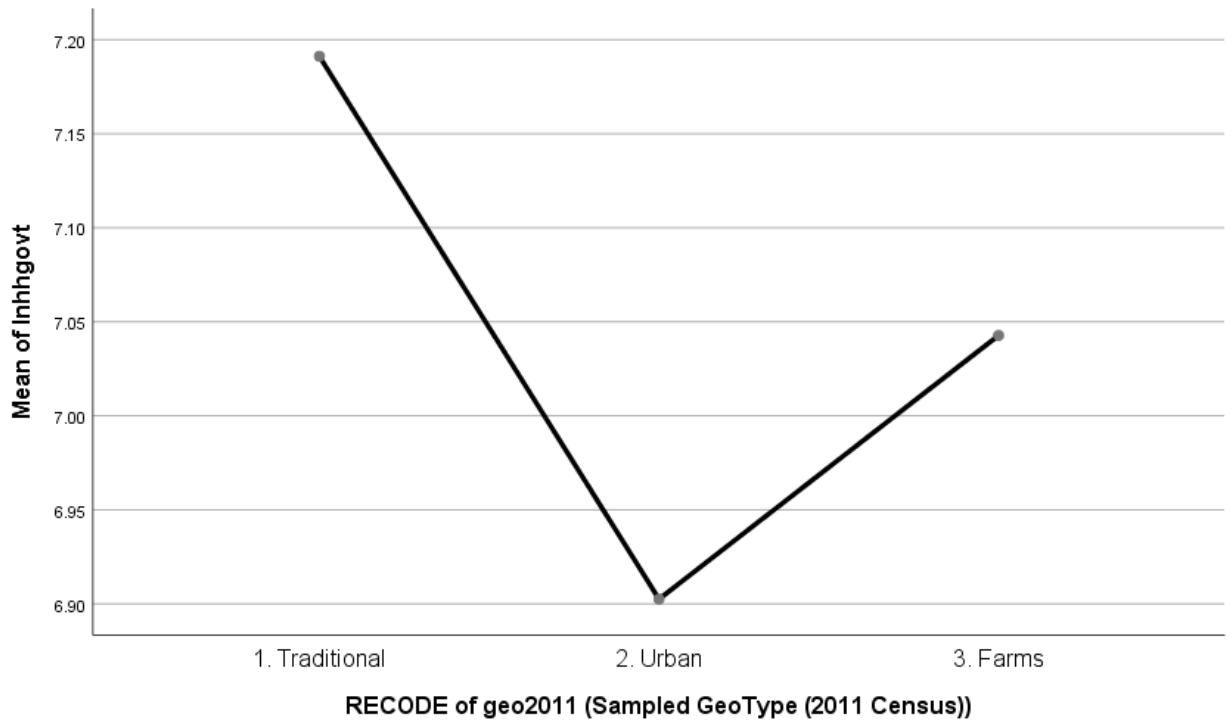
The figure presents an analysis of households' expenditure with full imputations across geographical settlement. The graph shows that expenditure with full imputations of NRH living in urban is more than households living in the farm. While, households at traditional settlement have lowest expenditure with full imputation on the average.

Figure 14: Households with best education across geographical location.



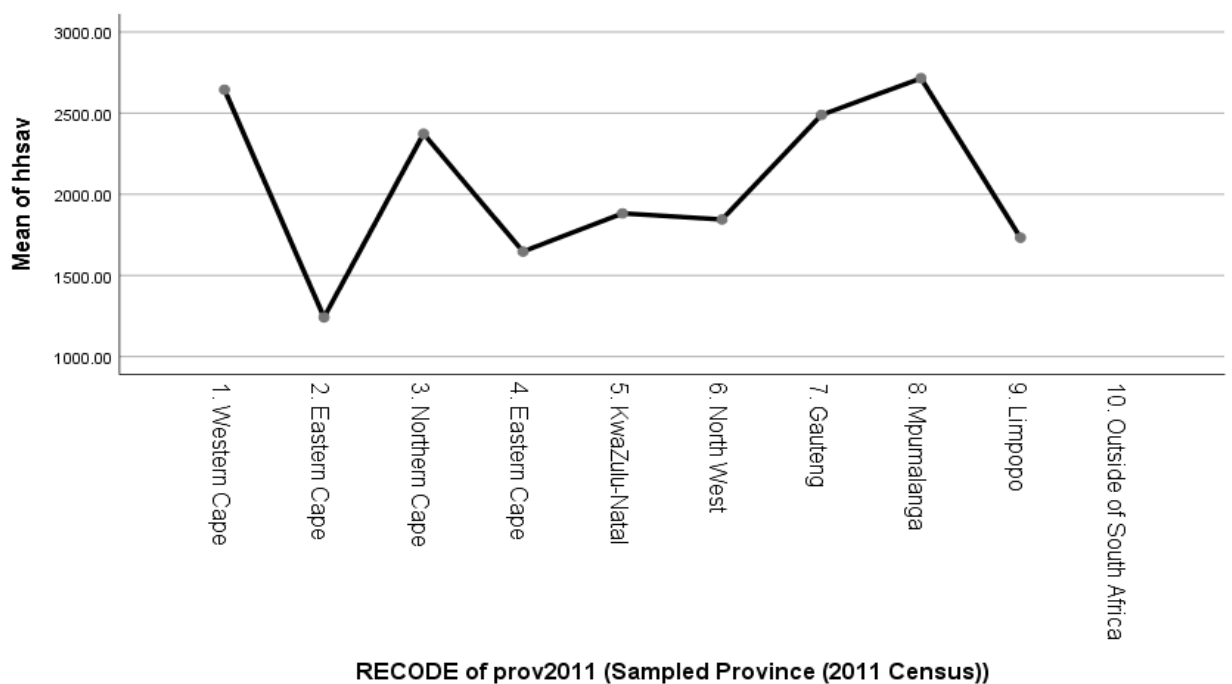
The figure presents an analysis on the mean of households with best education across geographical Settlement. The graph shows that NRH living in traditional settlement significantly receive best education more than households living in the farm. While, households at urban settlement have least education on the average.

Figure 15: Households Government grant received across geographical location.



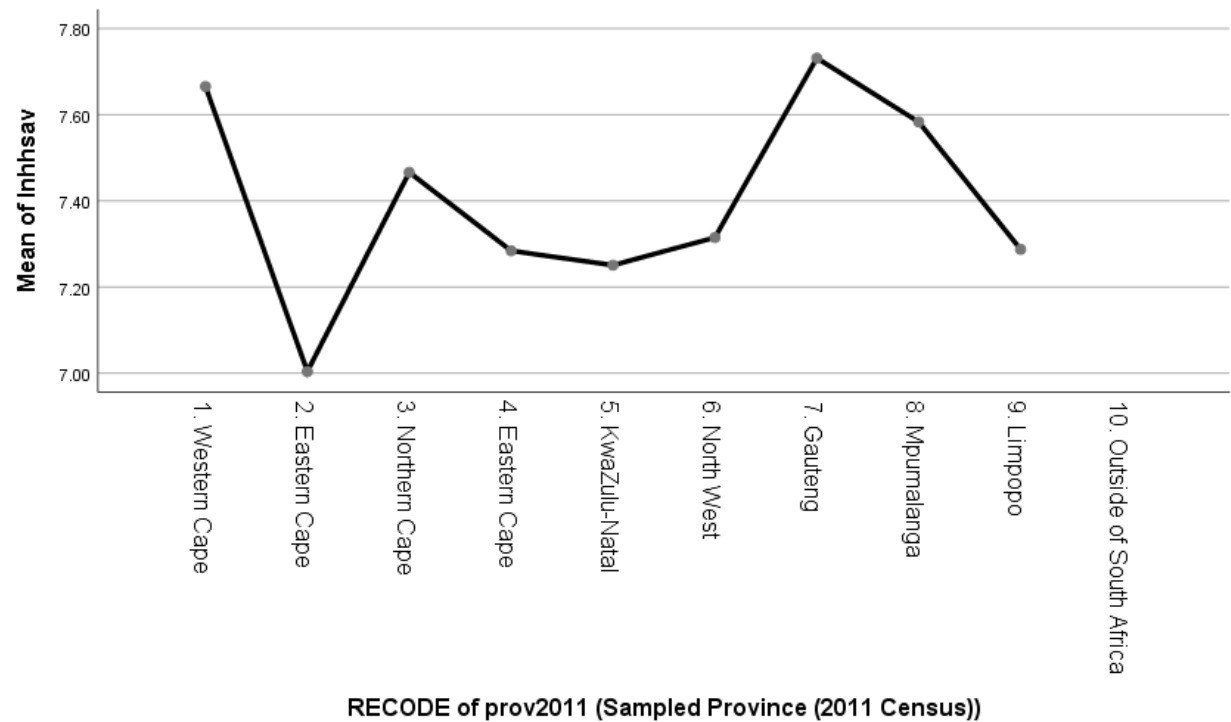
The figure presents an analysis of households' government grant received across geographical location. The graph shows that NRH living in traditional receive more grants than households living in the farm while, households at urban settlement receive the lowest grant on the average.

Figure 16: Households savings across provinces.



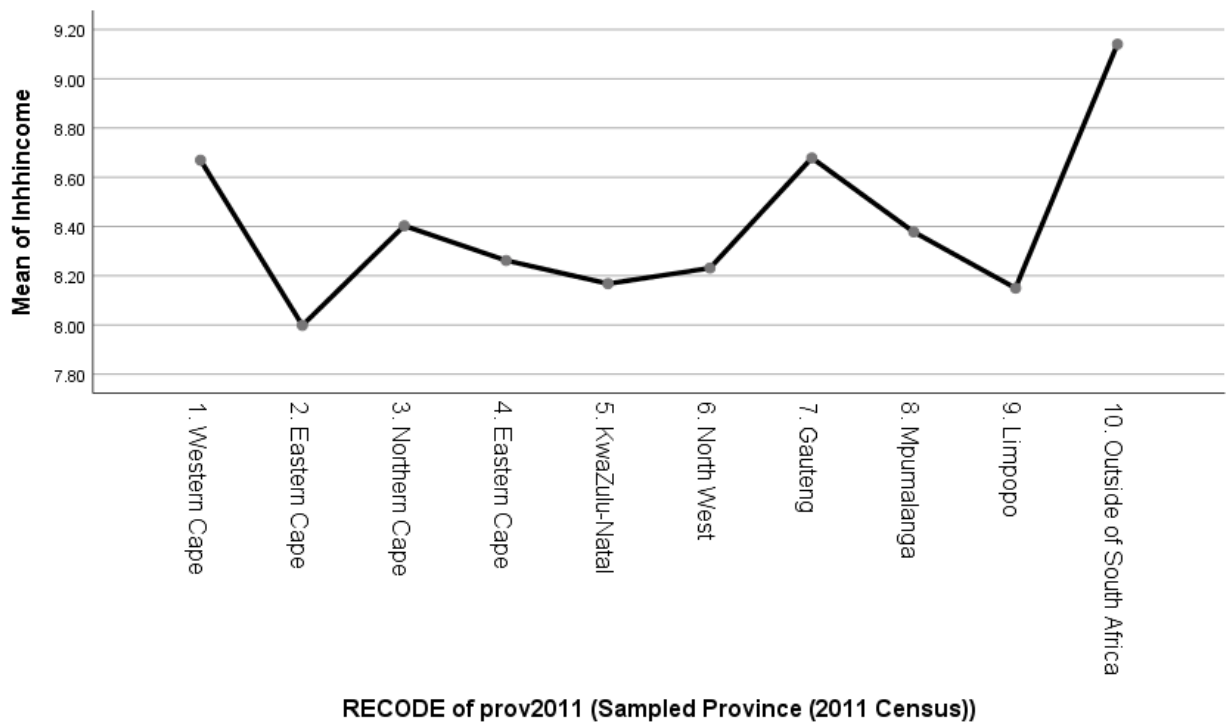
The figure presents an analysis of households’ savings across provinces. The graph shows that NRH living in Mpumalanga save significantly more than households living in other provinces. While, households at Eastern Cape provinces have lowest savings on the average.

Figure 17: Mean of Households savings across provinces.



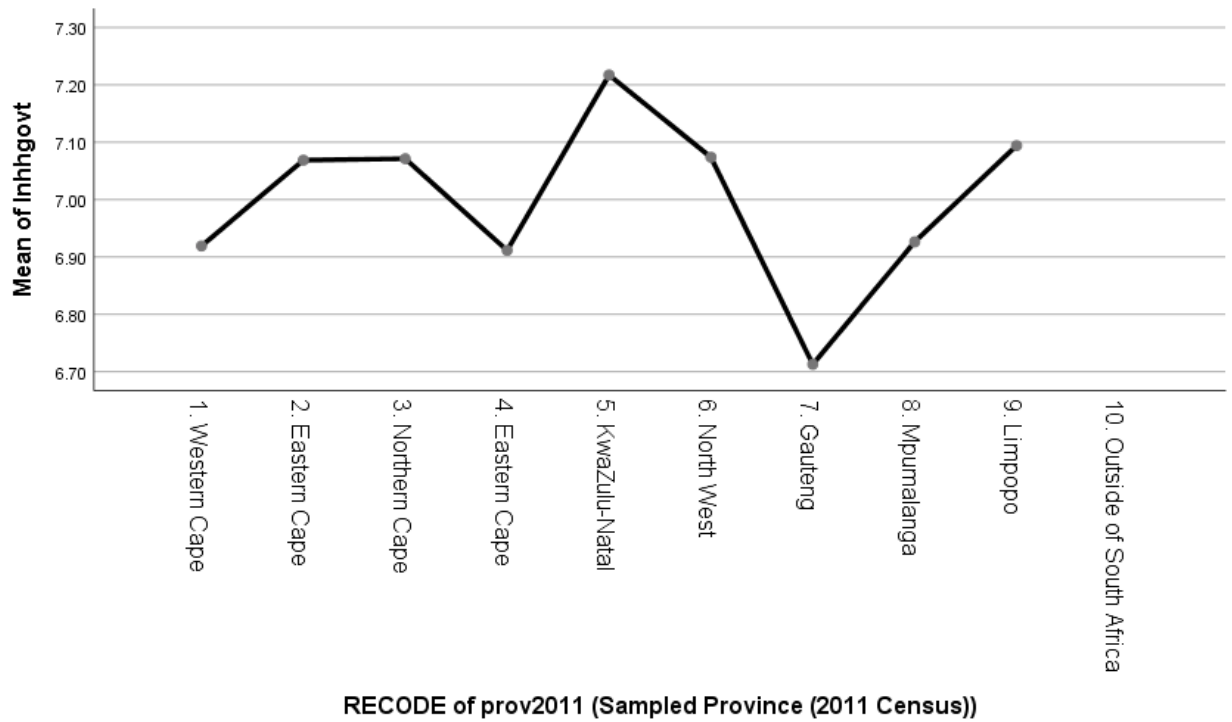
The figure presents an analysis of individual households’ savings across provinces. The graph shows that individuals NRH living in Gauteng save significantly more than individual households living in other provinces. While, individual households at Eastern Cape Province have lowest savings on the average.

Figure 18: Mean of Households income across provinces.



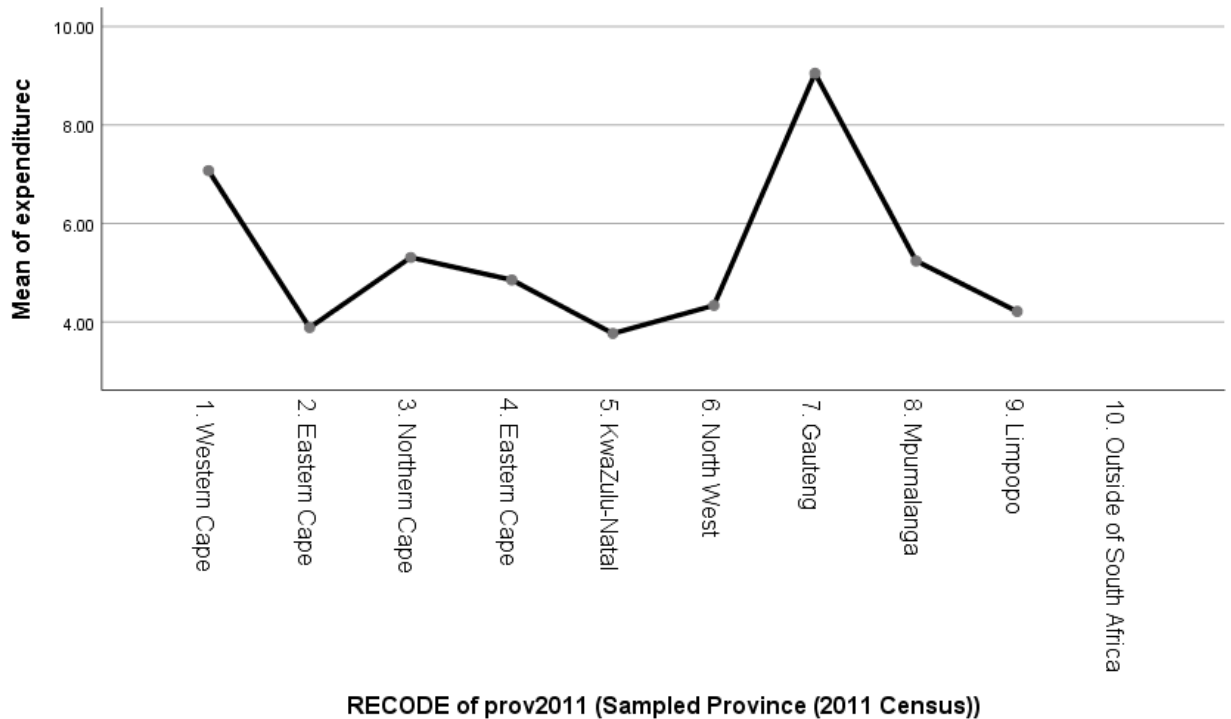
The figure presents an analysis of individual households' income across provinces. The graph shows that individuals NRH living outside of South Africa earns significantly more than individual households living in other provinces. While, individual households at Eastern Cape Province have lowest earnings on the average.

Figure 19: Households Government grant received across provinces.



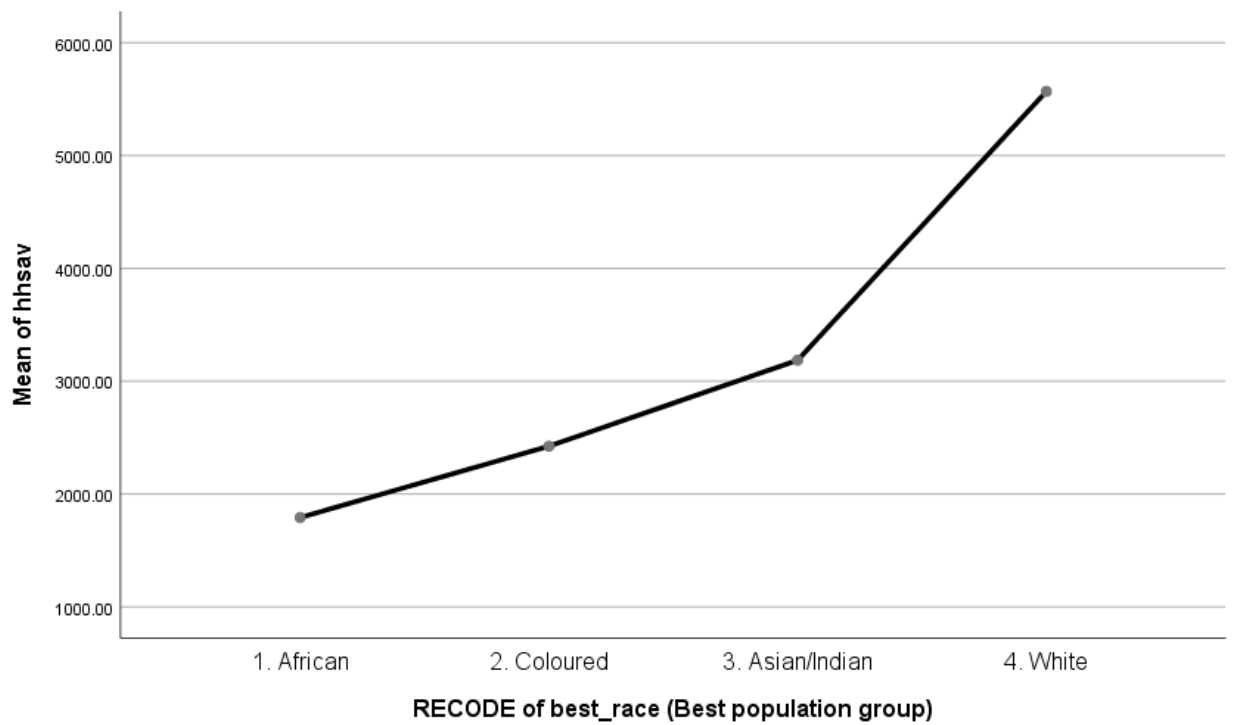
The figure presents an analysis of individual household's government grant received across provinces. The graph shows that NRH living in Kwazulu-Natal receive more grants than individual households living in other provinces while households at Gauteng province receive lowest grant on the average.

Figure 20: Households expenditure across provinces.



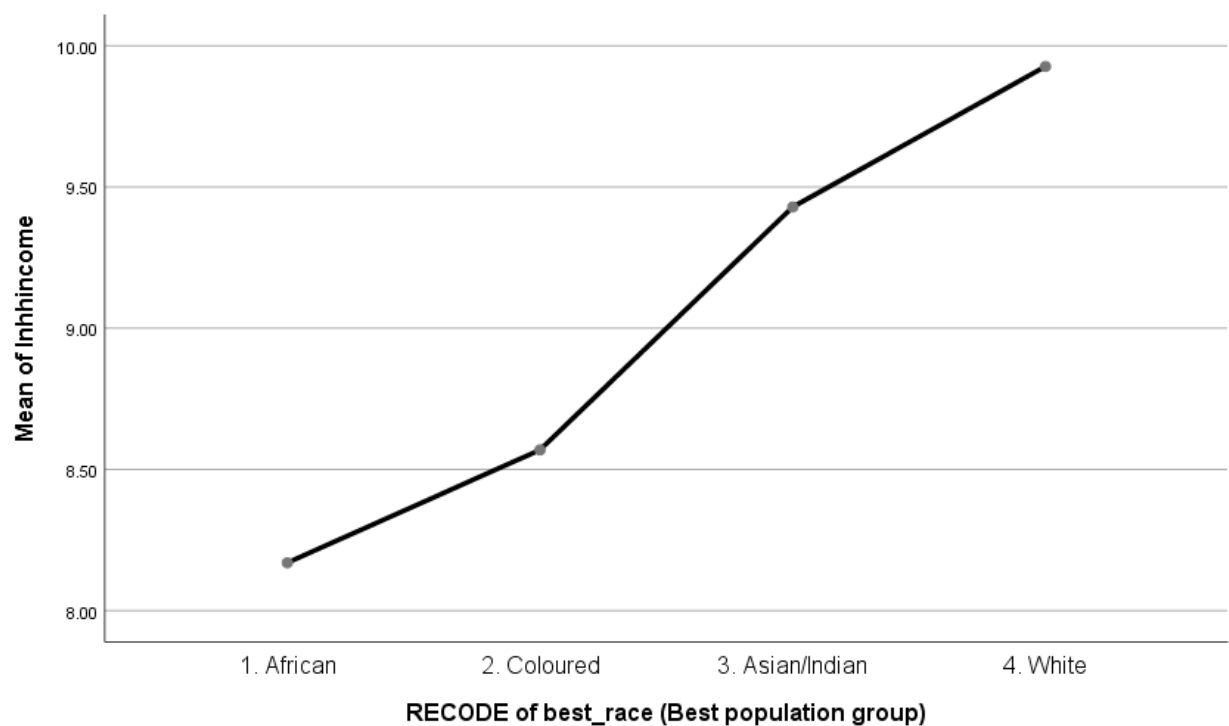
The figure presents an analysis of individual households' expenditure across provinces. The graph shows that individual NRH living in Gauteng spend significantly more than households living other province while households in Kwazulu-Natal province have lowest expenditure on the average.

Figure 21: Households savings across race.



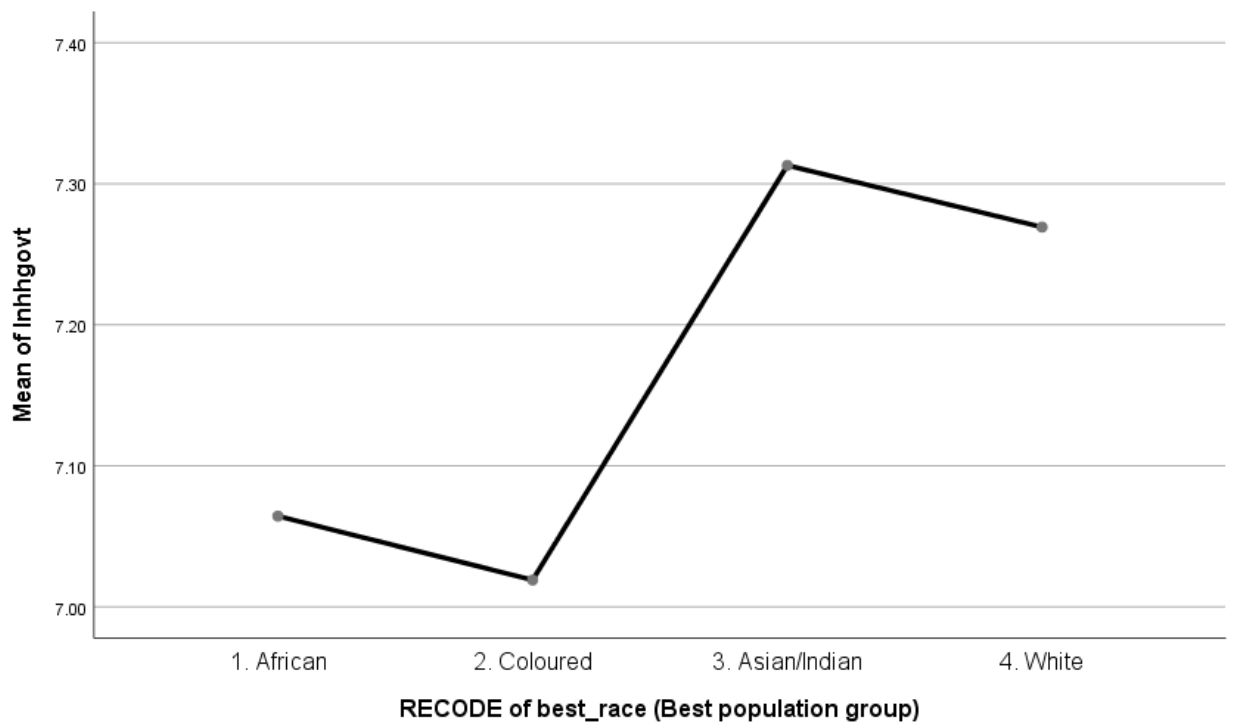
The figure above presents an analysis of households' savings across races. The graph shows that NRH of white race save significantly more than households Asian/Indian and Coloured race while households of African race have lowest savings on the average.

Figure 22 Households Income across race.



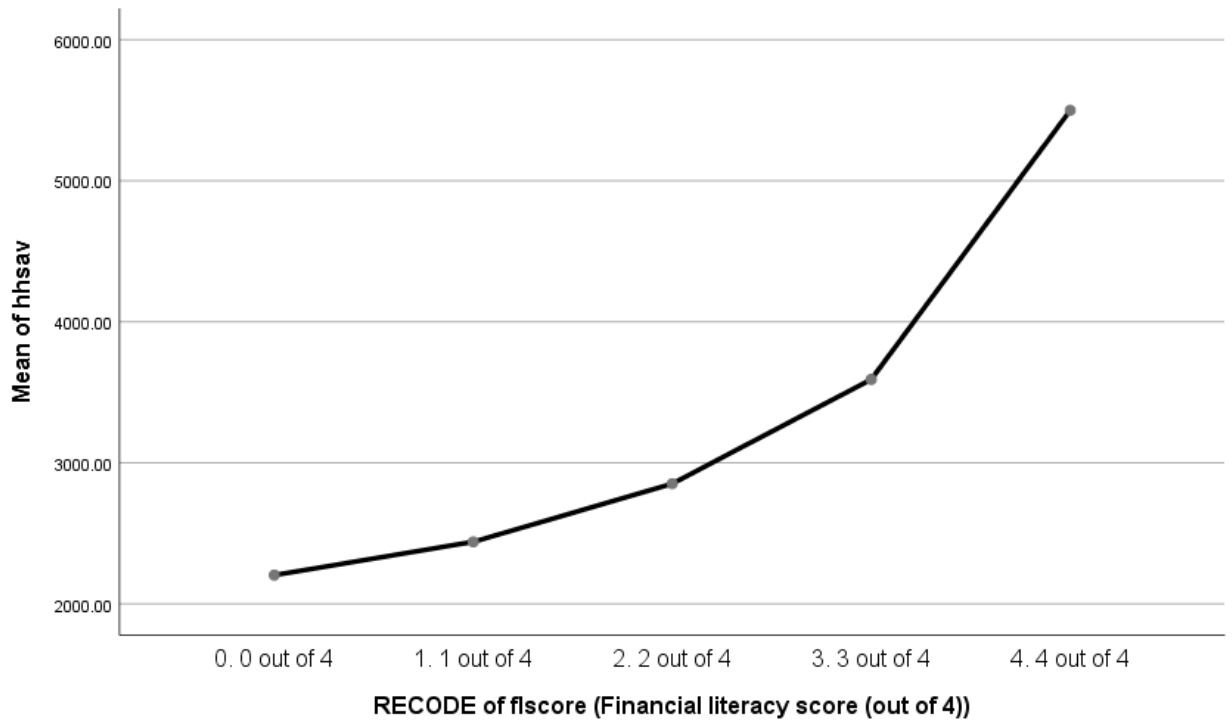
The figure above presents an analysis of households’ income across races. The graph shows that NRH of white race earn significantly more than households Asian/Indian and Coloured race while households of African race have lowest earnings on the average.

Figure 23: Households Government grant received across race



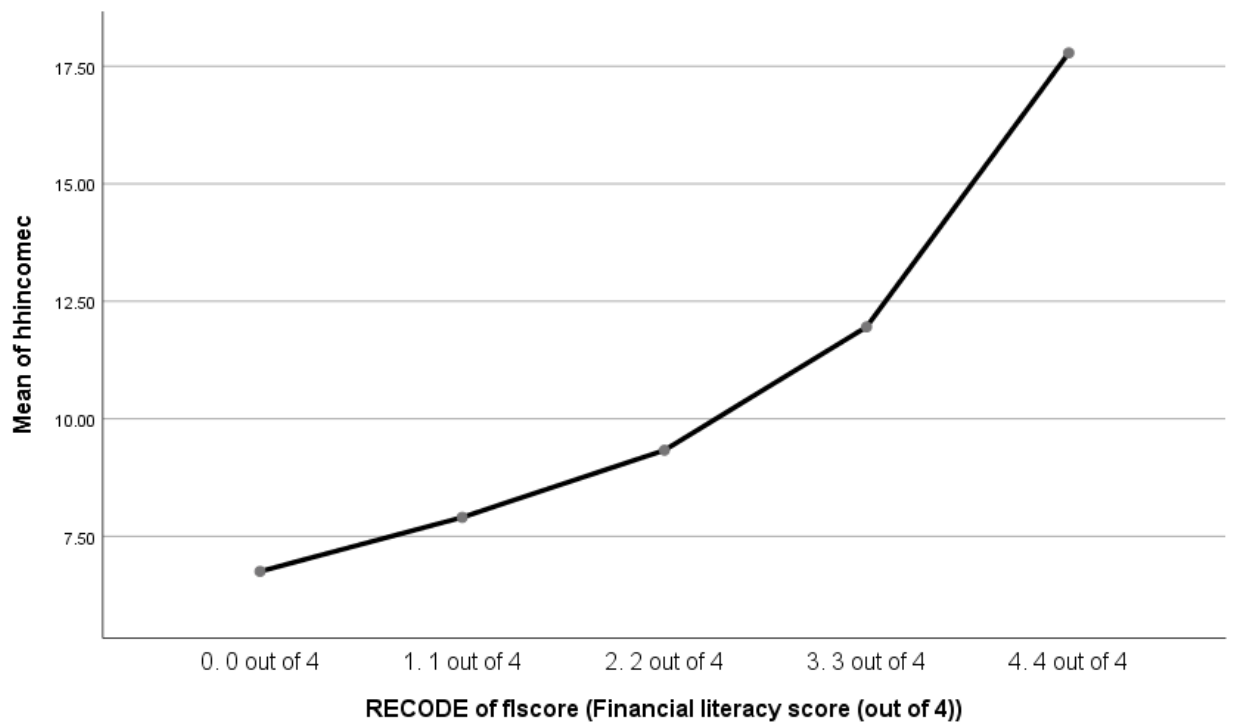
The figure presents an analysis of household's government grant received across races. The graph shows that NRH of Asian/Indian race receive more grants than households of African and white race. While, households of coloured race receive lowest grant on the average.

Figure 24: Households savings across financial literacy score.



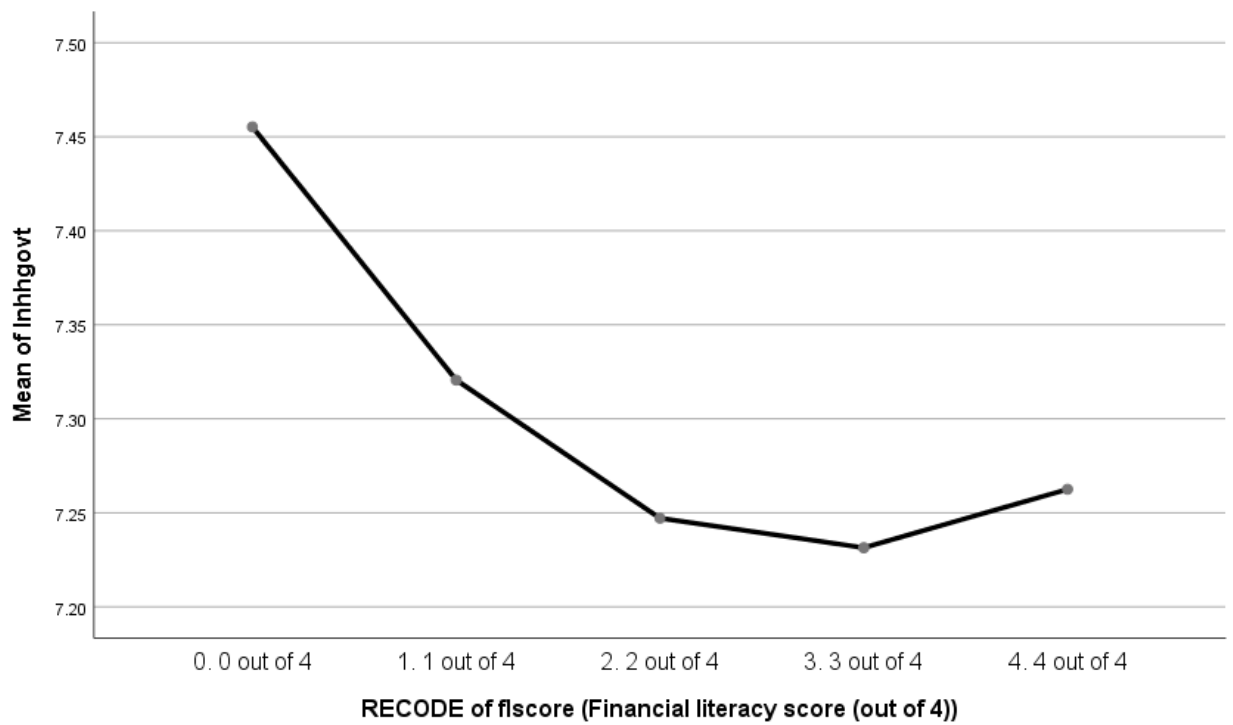
The figure above presents an analysis of households' savings across financial literacy score. The graph shows that NRH which score 4.4 out of 4 save significantly more than households while households with 0.0 out of 4 have lowest score on the average.

Figure 25 Households income across financial literacy score.



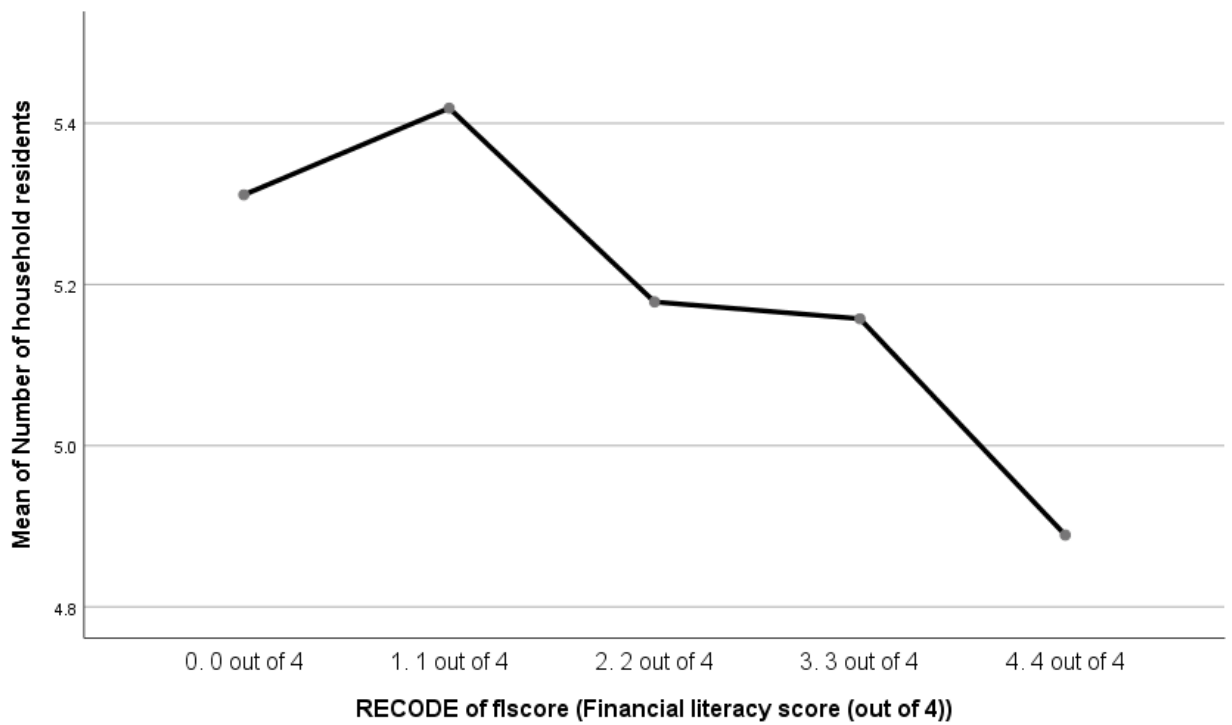
The figure above presents an analysis of households' income across financial literacy score. The graph shows that NRH which score 4.4 out of 4 earn significantly more than other households while households with 0.0 out of 4 have lowest earnings score on the average.

Figure 26: Households government grants received across financial literacy score.



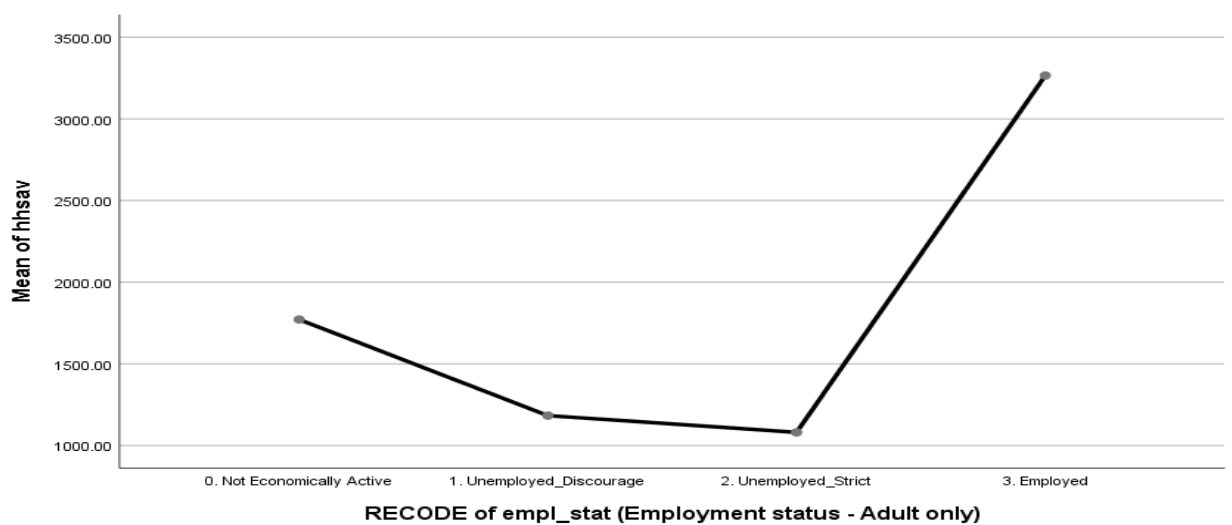
The figure above presents an analysis of households' government grants received across financial literacy score. The graph shows that NRH which score 0.0 out of 4 receive more grants from government than other households while households with 3.3 out of 4 received the lowest grant on the average.

Figure 27: Number of households' residents across financial literacy score.



The figure presents an analysis on the number of households' residents across financial literacy score. The graph shows that NRH which score 1.1 out of 4 is significantly more than other households while households with 4.4 out of 4 have the lowest number of residents on the average.

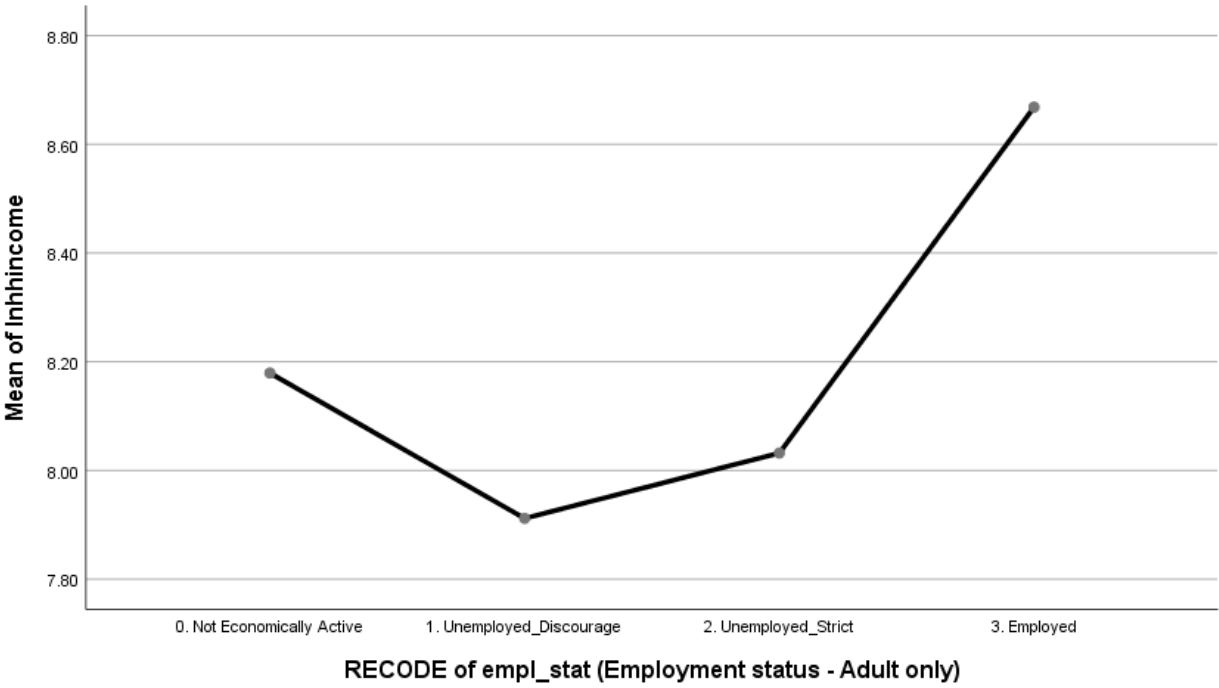
Figure 28: Households savings across employment status.



The figure above presents an analysis of households' savings across employment status. The graph shows that NRH that are employed save significantly more than Not Economically

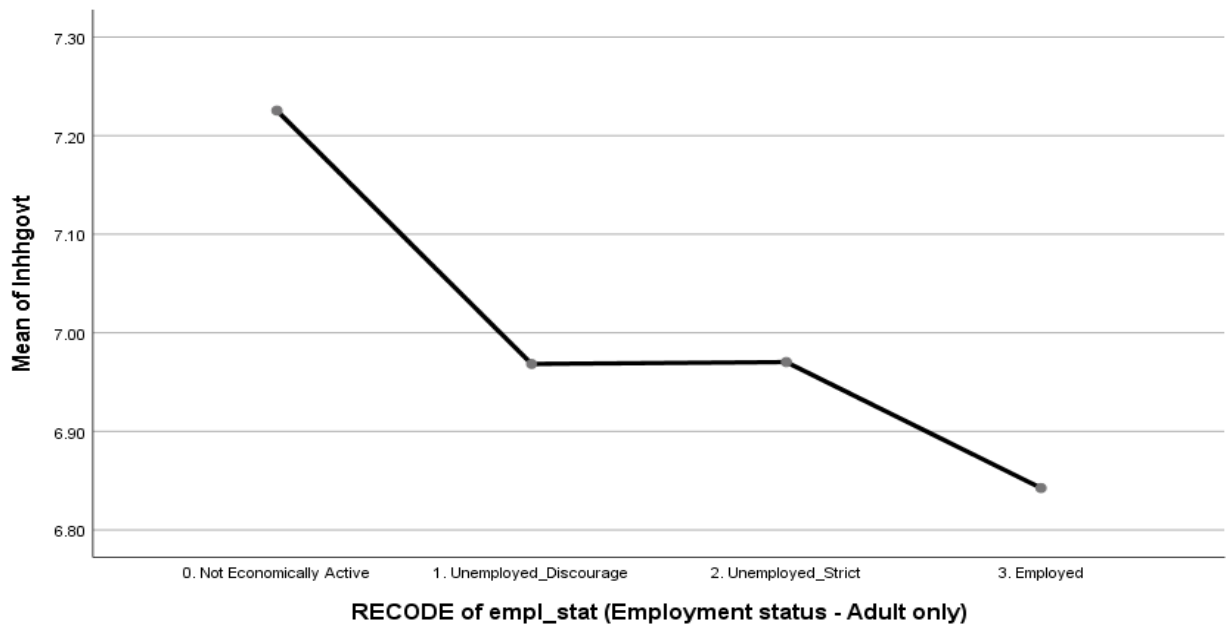
Active and unemployed-discourage households. Meanwhile, unemployed-strict households have lowest savings on the average.

Figure 29: Households income across employment status.



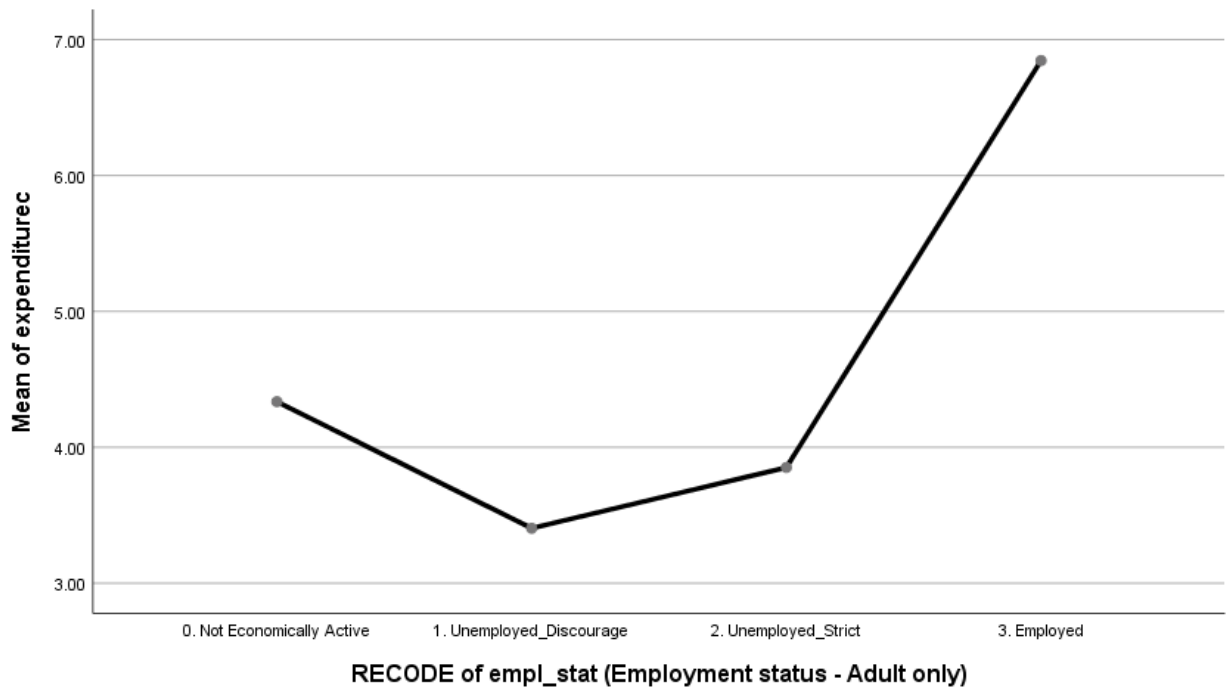
The figure presents an analysis of households’ income across employment status. The graph shows that NRH that are employed earn significantly more than Not Economically Active and unemployed-strict households. However, unemployed-discouraged households have lowest earnings on the average.

Figure 30: Households government grant received across employment status.



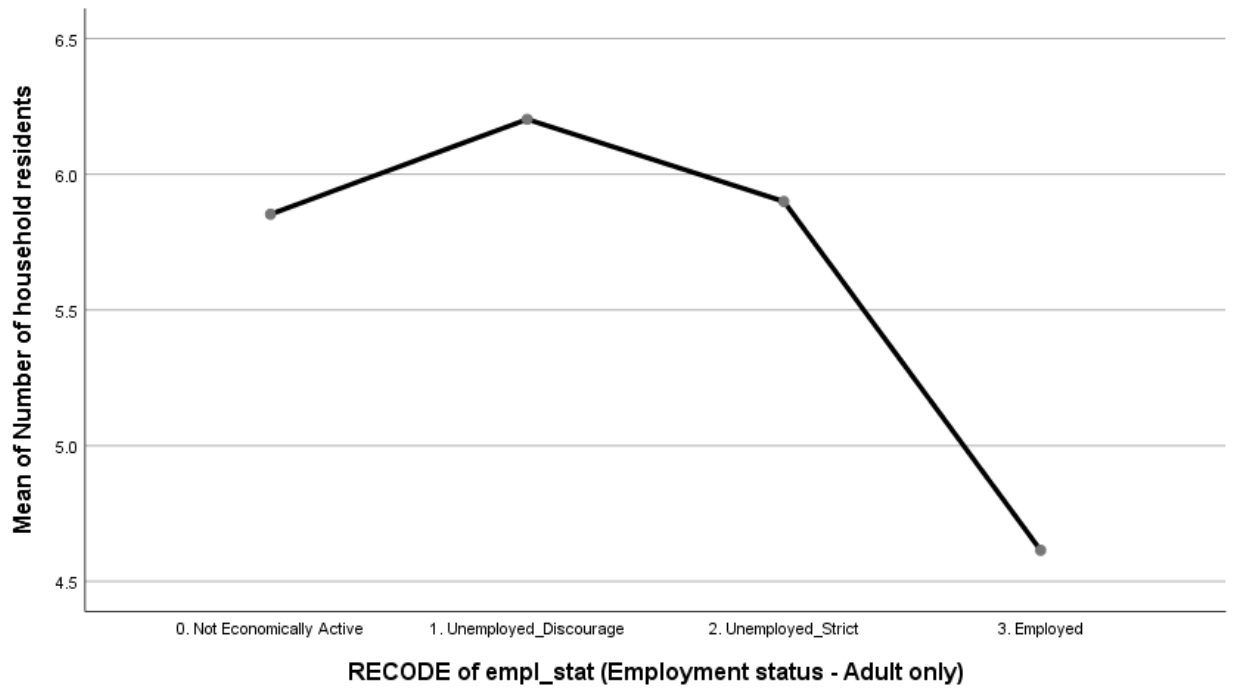
The figure above presents an analysis of households' government grant received across employment status. The graph shows that NRH that are not economically active receive grants from government more than unemployed-discourage and unemployed strict households while employed households receive lowest grants on the average.

Figure 31: Households expenditure across employment status.



The figure above presents an analysis of households' expenditure across employment status. The graph shows that NRH that are employed spend significantly more than Not Economically Active and unemployed-strict households while unemployed-discouraged households have lowest expenditure on the average.

Figure 32: Number of households' residents across employment status.



The figure presents an analysis of number households' residents across employment status. The graph shows that NRH that are unemployed-discouraged is significantly more than Not Economically Active and unemployed-strict households but employed households have lowest number of residents on the average.

4.2 Model Estimation Results

The regression model is limited to Non-Ricardian Households.

4.2.1 Savings Model

Table: 5

| VARIABLES | P_OLS | Pe_OLS | PD_OLS | RE | FE |
|----------------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| Lnhhincome | 1.352*** (0.023) | | 1.491*** (0.031) | 1.402*** (0.016) | 1.513*** (0.032) |
| Hhsizer | -0.012*** (0.004) | 0.099*** (0.006) | -0.004 (0.004) | -0.014*** (0.003) | -0.0187*** (0.007) |
| Lnhhgovt | 0.081*** (0.017) | 0.099*** (0.025) | 0.084*** (0.024) | 0.080*** (0.011) | 0.048** (0.022) |
| Coloured | -0.107* (0.055) | 0.020 (0.077) | 0.056 (0.056) | -0.147*** (0.035) | |
| Asian/India | -0.835*** (0.148) | 0.208 (0.257) | -0.295 (0.209) | -0.820*** (0.110) | |
| White | -0.637*** (0.131) | 0.343*** (0.108) | 0.013 (0.154) | -1.023*** (0.099) | |
| Male | 0.012 (0.023) | 0.120*** (0.036) | 0.045* (0.027) | 0.022 (0.017) | |
| Urban | -0.0593** (0.029) | 0.138*** (0.044) | -0.048 (0.035) | -0.059*** (0.021) | -0.274*** (0.0910) |
| Farms | 0.193*** (0.047) | 0.290*** (0.078) | 0.023 (0.051) | 0.142*** (0.032) | -0.0847 (0.0981) |
| Wave2 | -0.044 (0.040) | 0.220*** (0.054) | | -0.024 (0.027) | -0.0293 (0.0311) |
| Wave3 | -0.063* (0.033) | 0.363*** (0.048) | -0.008 (0.053) | -0.065*** (0.024) | -0.0682** (0.0304) |
| Wave4 | -0.168*** (0.036) | 0.543*** (0.050) | -0.154*** (0.044) | -0.194*** (0.025) | -0.216*** (0.0347) |
| Wave5 | -0.313*** (0.035) | 0.511*** (0.050) | -0.117*** (0.042) | -0.315*** (0.026) | -0.356*** (0.0379) |
| Eastern Cape | 0.007 (0.055) | -0.322*** (0.081) | -0.020 (0.067) | -0.032 (0.041) | -0.290 (0.418) |
| Northern Cape | -0.008 (0.055) | -0.217*** (0.076) | -0.063 (0.060) | 0.034 (0.038) | 0.848 (1.089) |
| Eastern Cape | -0.069 (0.065) | -0.248*** (0.093) | -0.077 (0.075) | -0.037 (0.047) | 0.626 (0.739) |
| KwaZulu-Natal | 0.057 (0.053) | -0.162** (0.081) | 0.007 (0.064) | 0.052 (0.039) | 0.285 (0.514) |
| North West | -0.023 (0.064) | -0.120 (0.094) | -0.052 (0.076) | -0.001 (0.048) | 0.629 (0.697) |
| Gauteng | 0.018 (0.063) | 0.013 (0.085) | -0.046 (0.073) | -0.038 (0.044) | 0.532 (0.538) |
| Mpumalanga | 0.066 (0.059) | 0.003 (0.089) | -0.017 (0.071) | 0.062 (0.045) | 0.480 (0.655) |
| Limpopo | 0.032 (0.060) | -0.112 (0.087) | -0.008 (0.071) | 0.030 (0.046) | 0.331 (0.587) |
| Lnexpenditure | | 0.381*** (0.027) | | | |
| Constant | -4.389*** (0.190) | 2.646*** (0.262) | 0.014 (0.075) | -4.783*** (0.137) | -5.629*** (0.559) |
| Observations | 13,657 | 13,657 | 6,207 | 13,659 | 13,659 |
| R-squared | 0.605 | 0.218 | 0.447 | | 0.507 |
| Number of pid | | | | 7,008 | 7,008 |
| Ramsey-Reset [prob] | 12.40[0.000] | 2.19[0.086] | | | |
| F-test [prob] | | | | | 274.23[0.0000] |
| Wald test [prob] | | | | 15203[0.000] | |
| Hausman teat [prob] | | | | | |

4.2.2 Investment Model

Table: 6

| | (1) | (2) | (3) | (4) |
|---------------------|-------------------|-------------------|--------------------|------------------|
| VARIABLES | P_OLS | P_OLS | RE_OLS | FE_OLS |
| Lnhhincome | 0.817*** (0.0963) | 0.817*** (0.0963) | 0.674*** (0.0775) | 0.418** (0.193) |
| Hhsizer | -0.0279 (0.0187) | -0.0279 (0.0187) | -0.0271* (0.0139) | 0.0727 (0.0771) |
| Lnhhgovt | -0.147** (0.0738) | -0.147** (0.0738) | -0.146*** (0.0483) | -0.140 (0.0890) |
| Coloured | 0.448** (0.217) | 0.448** (0.217) | 0.525*** (0.154) | |
| Asian/India | 0.629* (0.358) | 0.629* (0.358) | 0.744** (0.292) | |
| White | 0.777*** (0.217) | 0.777*** (0.217) | 0.903*** (0.161) | |
| Male | -0.127 (0.120) | -0.127 (0.120) | -0.0671 (0.0782) | |
| Urban | -0.356** (0.167) | -0.356** (0.167) | -0.365*** (0.119) | |
| Farms | -1.264*** (0.488) | -1.264*** (0.488) | -0.616* (0.324) | |
| Eastern Cape | 0.717*** (0.251) | 0.717*** (0.251) | 0.628*** (0.203) | |
| Northern Cape | 0.326 (0.199) | 0.326 (0.199) | 0.405*** (0.139) | |
| Eastern Cape | 0.244 (0.279) | 0.244 (0.279) | 0.326 (0.228) | |
| KwaZulu-Natal | 0.528** (0.253) | 0.528** (0.253) | 0.516*** (0.167) | |
| North West | -0.0900 (0.254) | -0.0900 (0.254) | 0.172 (0.183) | |
| Gauteng | 0.321 (0.208) | 0.321 (0.208) | 0.375** (0.160) | |
| Mpumalanga | 0.0990 (0.227) | 0.0990 (0.227) | 0.242 (0.188) | |
| Limpopo | 0.508* (0.264) | 0.508* (0.264) | 0.639*** (0.202) | |
| 2.wave | 0.213 (0.174) | 0.213 (0.174) | 0.451*** (0.116) | 0.553*** (0.139) |
| 3.wave | 0.144 (0.186) | 0.144 (0.186) | 0.376*** (0.128) | 0.607*** (0.180) |
| 4.wave | 0.273 (0.176) | 0.273 (0.176) | 0.382*** (0.132) | 0.448** (0.208) |
| 5.wave | 0.463** (0.189) | 0.463** (0.189) | 0.660*** (0.148) | 0.827*** (0.281) |
| Constant | 0.786 (0.884) | 0.786 (0.884) | 1.751*** (0.631) | 3.601** (1.633) |
| Observations | 755 | 755 | 755 | 755 |
| R-squared | 0.482 | 0.482 | | 0.307 |
| Ramsey-Reset [prob] | 1.92[0.1246] | – | – | – |
| F-test [prob] | -- | | | 7.02[0.000] *** |
| Wald test [prob] | | | 470.71[0.000] *** | |
| Hausman test [prob] | | | 15.20[0.0335] ** | |

Notes_Titles

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3 shows the result of the determinant of savings among low-income households in South Africa. The research largely depends on the assumption that all government grant receiving households were poor at the time of collecting the NIDS data for all the five waves. The explanatory variable includes household income from various sources, such as labour market wages, income from investment, household expenditure and the amount of government grant received by the household, household race, province and geographical

classification of household residence. Four different panel data models were analysed, namely: The Pooled OLS, Pooled Differencing OLS, Random Effect and Fixed Effect models. The Pooled OLS technique, the Ramsey-RESET test for omitted variable bias indicates the absence of unobserved individual effects omitted.

The null hypothesis of absence of omitted variable was rejected as inferred from the Ramsey-Reset test statistics of 12.40 with 1% level of significant. Furthermore, it is of importance to proceed with our estimation to a more accommodating panel data model estimator. In the same line of thought, the F-statistics value of 274.23 and the Wald test statistics value of 15203 of both Fixed Effect and Random Effect estimation, respectively, confirmed the omitted variable bias of Pooled OLS, which are significant at 1% confirmed evidence of omitted variables making the Fixed Effect and Random Effect models more appropriate than the Pooled OLS. However, the Hausman test statistic value of 401.701 is significant; hence, we reject the null hypothesis of the appropriateness of GLS estimates favouring the fixed effect model as the most appropriate.

A cursory look at the result (fixed effect estimation) indicates that household income had positive and significant impact on household savings, household size had a negative significant impact on household savings, and government grant received by household had a positive and significant impact on household savings, all things being equal. As expected, the result shows that black-dominated households have less likelihood of savings than white-dominated households. Also, Asian/India households, on the average, save more than black-dominated households and finally, coloured-dominated households are less likely to save more than black households, all things being equal, and in view of the prevailing economic condition at the time the data were collected.

This result corroborates the work of Zwane, Greyling, and Maleka, (2016) who revealed that South African household savings are strongly driven by income, age structure and employment status. Their causal nexus estimation between household size and savings was negative, indicating the bane of larger families on households' savings. Although their result only includes the first three waves of the NIDS data and the analysis is not specific on NRH. However, our result consistently showed the same direction, but with a different magnitude of effects.

Table 4 presents the results of the determinant of investment among low income household in South Africa. The research largely depends on the assumption that all government grant

receiving household were poor as at the time of collecting the NIDS data for all the five waves. The explanatory variable includes household income from various sources, such as labour market wages, income from subsistence agriculture and other part time work of all members of the household, household expenditure, and amount of government grant received by the household, household race, province, and geographical classification of household residence. Four different panel data models were estimated for and they include the Pooled OLS, Random Effect and Fixed Effect Models. The Pooled OLS estimation, the Ramsey-RESET test for omitted variable bias indicates that there are no unobserved individual effects omitted as the null hypothesis of no omitted variable was accepted as deduced from the test statistics of 1.92 which is not significant at 10%. Therefore, for robustness analysis we proceed to estimate the other variations of the panel data models. Similarly, the F-statistics value of 7.02 and the Wald test statistics value of 470.71 which are significant at 1% the direction of impact remains the same for both Random and Fixed effect. However, the Hausman test statistic value of 3.023 is not significant, hence we failed to reject the null hypothesis of the appropriateness of GLS estimates favouring the random effect model as the most appropriate.

A cursory look at the result (pooled OLS estimation) indicates that household income had positive and significant impact on household investment, household size had a negative significant impact on household investment, and government grant received by household has a negative and significant impact on household investment all things being equal. As expected, the result shows that the black dominated household has likelihood of invest less than white dominated household, also Asian/India Household on the average invest more than black dominated household and finally coloured dominated household are more likely to invest more than black household all things being equal.

The most surprising result is the relationship between household received government grant and household investment which shows negative contrary to positive relationship discovered with savings. The reason is not farfetched since the households are low income and does not engage in investment activities but spend most accumulated savings on expenditure. This finding confirms the assumption of Non-Ricardian Households, which includes negative savings and low investment. It also confirmed that government grant crowd out household's investment since Non-Ricardian Households both lack capacity to investment and also not encourage since both present and future expenditure whole depends on government.

4.3 Conclusion: The findings reveal that fixed effect is more appropriate for savings model while pooled OLS is for investment. The two results follow the economical expectation of the two equations in chapter three. The results show that households' income, household size, household geographical location and household grants, among others, are major determinants of households' savings and investment in South Africa. Government grant received by households have positive relationship with savings and negative relationship with investment. This is because the low-income households do not save to invest but save for delayed consumption. The result also showed the likelihood of government grants to households to crowd out household investment as they over-depend on the government for both present and future expenditure.

4.4 Chapter Summary

This chapter will be constructing the framework to analyse the data from the previous chapter in order to answer the research question and its findings will be elaborated upon. By discussing the end results of the specific model in the previous chapter as well.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

By analysing the determinants of savings and investment among low income households in South Africa using the National Income Dynamic Study (NIDS) dataset from wave 1 to wave 5. The literature review includes conceptual discussion of household savings and investment in relation to socio-economic factors that can directly and indirectly impact the magnitude of them as generated by low income households. The reviewed findings of the undertaken study observed that the results of the analysis were that high-income households with less household's members are richer than the low-income households whom had more household members.

The result is further buttressed by the results which show that the black dominated households have likelihood of saving less than white dominated households. In addition, Asian/India household on the average save more than black dominated household and finally coloured dominated household are less likely to save more than black household if and when all things are being equal.

5.2 Summary

This study examined the determinants of savings and investment among low-income households in South Africa. The study drew inspiration from the set of literatures that identified households' savings and investment as major determinant of improved standard of living and the lack of inadequacy of it as explaining the economic crises and economic boom experienced by the two major categories of households. Both the history and current condition of low-income households in South Africa occasion the need for dedicated study on determinants of savings and investment among low-income households. The trend analysis shows that despite the numerous benefits, low-income household savings and investment remain issues that characterise the lives of many low-income households in South Africa in the post-apartheid era. The study was based on Non-Ricardian Households (NRH), comprising low-income households, who largely depend on government welfare benefits for sustenance and are classified as the low-savings and hence low-income households. Ricardian households, on the other hand, comprise medium and high-income households, who are involved in the financial market, participate in buying bonds or stocks, and are classified as saving households. The research used *National Income Dynamics Study (NIDS)* dataset wave one to five. Four different panel models were analysed in determining the socio-economic characteristics of NRH in South

Africa. The panel estimators include Pooled OLS, fixed and random effects methods. The results show that households' income, household size, household geographical location and household grants, among others, are major determinants of households' savings and investment in South Africa. Government grants received by households have positive relationship with savings and negative relationship with investment. This is because the low-income households do not save to invest but save for delayed consumption. The result also showed the likelihood of government grants to households to crowd out households' investment as they over-depend on the government for both present and future expenditure.

5.3 Conclusion

The study has analysed the determinants of savings and investment among low income households in South Africa using the National Income Dynamic Study (NIDS) dataset from wave 1 to wave 5. It was observed from the results of the analysis that high income households with less household members are richer than the low-income household who have more household members. The result shows that black-dominated households have less likelihood of savings and investment than white-dominated households. In addition, Asian/Indian households on average, save and invest more than black-dominated households and, finally, coloured-dominated households are less likely to save and invest than black households, all things being equal. This can be attributed to the prevailing economic circumstances as at the time of data collection and the value attached to family ties and family beliefs on support to family members by the different categories of households.

The study makes significant contribution towards addressing the unfortunate situation of household savings and investment among low-income brackets in South Africa. These households tend to have a high level of debt and are faced with the increased pressure of high interest rates and debt repayment. As household debt continues to increase, disposable household income grows at a rate below that of inflation. These factors have forced many South African households to turn to their retirement savings to cover cost-of-living expenses.

Many of these households are still poor despite the monthly grants from the government. The results revealed that household grant contributed positively towards the level of savings. The level of savings is still considerably low and the low-income households in South Africa represent true Non-Ricardian households as the majority of them have zero or negative savings. The average household size of Non-Ricardian is about twice the size of the Ricardian, while their average level of savings is relatively low in size.

The study concludes that the level of savings and investment is very low among Non-Ricardian households, which is aggravated by the household size. Also, government grants have positively impacted the level of households' savings among Non-Ricardian households. On the other hand, the investment model shows a negative relationship between government grant received by the households and households' investment which suggest that grant receiving households not only lack adequate resources to invest but also showed that government grant crowd out households' investment. The reason alluded to this situation may likely show over-dependence on government for both present and future expenditure is major fixture that characterize Non-Ricardian Households.

5.4 Recommendation

The study recommends that government should create a more enabling environment through the increase in access to assets such as lands, capital, and quality education for Non-Ricardian households to engage in productive activities which will increase households' transition from Non-Ricardian to Ricardian. Also, more low-skill jobs should be created and reduction of birth rate among low-income households should be encouraged through government driven aggressive advocacy campaigns. This will greatly reduce the low-income households' expenditure, increase their level of savings, and help to pull them out of the vicious circle of poverty. Government can boost Non-Ricardian Households' savings through increase in various grants, but it should be careful not to discourage households' investment through over-dependence on government grants.

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APPENDICES

Appendix A: Ethics Approval Certificate

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| Office of the Chairperson Research Ethics Committee | Faculty: BUSINESS AND MANAGEMENT SCIENCES |
|--|--|

At a meeting of the Faculty's Research Ethics Committee on **21 August 2018**, Ethics Provisional Approval was granted to **Chantel De Vos (203136675)** for research activities of **M Tech: Cost & Management Accounting** at Cape Peninsula University of Technology.

| | |
|---------------------------------------|---|
| Title of dissertation/thesis/project: | DETERMINANTS OF SAVINGS AND INVESTMENT OF LOW INCOME HOUSEHOLDS IN THE WESTERN CAPE, SOUTH AFRICA Lead Researcher/Supervisor: Prof L.O. Obokoh |
|---------------------------------------|---|

Comments:

Decision: Provisionally Approved

| | |
|---|-----------------------|
|  | 21 August 2018 |
| Signed: Chairperson: Research Ethics Committee | Date |

Clearance Certificate No | 2018FBREC

Appendix B: Letter of Approval from UCT



DataFirst

Private Bag, Rondebosch 7701, Cape Town, South Africa
School of Economics Building, Middle Campus, Rondebosch

30 July 2018

Faculty of Business
Cape Peninsula University of Technology
Tel: 021-460-3261
Email: ramoelletsim@cput.ac.za

TO WHOM IT MAY CONCERN

This is to certify that Chantel de Vos (CPUT student number 203136675) has been granted permission to download and use the data from the National Income Dynamics Study for research purposes. Please note that the data has been placed in the public domain for all to use.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Lynn Woolfson'.

Lynn Woolfson
Manager, DataFirst
University of Cape Town